THE IRON Institute

10 I i uninosulime & cades. A Review of the Hardware, Iron, Machinery and Ivic.

Published every Thursday Morning by David Williams Co., 232-238 William St., New York,

Vol. LXVI. No: 19.

NN.

New York, Thursday, November 8, 1900.

\$5.00 a Year, including Postage. Single Copies, Ten Cents.

Reading Matter Contents.....page 50 Alphabetical Index to Advertisers " 133 Classified List of Advertisers.... 135 Advertising and Subscription Rates " 57







Time, Belts, Money. GreatestStrength with Least Metal.

Send for Circulars and Free Samples. THE BRISTOL CO., Waterbury. Conn.



SAMSON CORDAGE WORKS, Boston, Mass.

TURNBUCKLES.



MERRILL BROS., Brooklyn, N.Y

PILLING & CRANE Girard Building, Philada Lewis Block, Pittsburgh

Large workers in galvanized iron use two makes: Apollo for fine; another for rough.

Mistake. Apollo is best for rough work too

> American Sheet Steel Company Battery Park Building New York

AP SHOOTING







emington Arms Co. ILION NEW YORK Agencies 313 Broadway - New York - 425 Market St. San Francisco

CAHALL BOILERS See Page 94.

CAPEWELL HORSE NAILS.

NEW YORK, PHILADELPHIA, CHICAGO, ST. LOUIS, BOSTON, DETROIT,

BRANCHES: CINCINNATI

SAN FRANCISCO. PORTLAND, ORE., BUFFALO, BALTIMORE, NEW ORLEANS.



THE CAPEWELL HORSE NAIL COMPANY,

HARTFORD, CONN.

06 96 96 96 96

Jenkins '96 Packing.

Pronounced by steam users throughout the world the best joint packing manufactured. Expensive? Not at all, as it weighs 30% less than many other packings, consequently is much cheaper.

JENKINS BROTHERS, New York, Boston, Philadelphia. Chicago.

Brass Prices High So Use Bright "Swedoh" Stamping Steel. Easily Brass Plated and Save Money. page 161



MAGNOLIA M Rest Auti-Friction Metal for all Machinery METAL.

Fac-Simile of Bar. Imitations.



MAGNOLIA METAL CO.,

NEW YORK.

266 and 267 West St., London, Chicago, Montreal, Pittsburgh, Boston, Sar Francisco, Philadelphia.

ANSONIA BRASS

OPPER (

RRASS AND COPPER

Seamless Tubes, Sheets, Rods and Wire

Ingot Copper.

Condenser, Plates, Pump Linings, Round, Square and Hexagon Bars, for Pump Piston Rods and Bolt Forgings.

99 John Street,

New York.

Randolph-(lowes (lo.,

Main Office and Mill,

WATERBURY, CONN.

MANUFACTURERS OF

SHEET BRASS & COPPER. BRAZED BRASS & COPPER TUBES.

SEAMLESS BRASS & COPPER TUBES TO 36 IN. DIAM.

New York Office, 253 Broadway, Postal Tel-egraph Bldg., Room 202. Chicago Office, 602 Fisher Bldg. Boston Office, Cor. Oliver and Purchase Sts.



Waterbury Brass Co.

Sheet, Roll and Platers' Brass,

German Silver, Copper, Brass and German Silver Wire, Brass and Copper Tubing.

COPPER RIVETS AND BURS. TAPE MEASURES,

METALLIC EYELETS,

Brass Kettles, Brass Tags, Powder Flasks, Shot Pouches, &c., AND SMALL BRASS WARES OF EVERY DESCRIPTION

Cartridge Metal in Sheets or Shells a Specialty. DEPOTS:

80 Centre St., New York. 125 Eddy St., Providence, R. I. 38 Mechanic St., Newark, N. J. MILLS AT WATERBURY, CONN.

DEOXIDIZED ORDNANCE and COMPOSITION METALS

of all descriptions. Satisfactory prices.

BRIDGEPORT DEOXIDIZED BRONZE & METAL CO.,

BRIDGEPORT, CONN.

Matthiessen & Hegeler Zinc Co.,

LA SALLE, ILLINOIS.

SMELTERS OF SPELTER

AND MANUFACTURERS OF

SHEET ZINC AND SULPHURIC ACID.

Special Sizes of Zinc cut to order. Rolled Battery Plates. Selected Plates for Etchers' and Lithographers' use. Selected Sheets for Paper and Card Makers' use. Stove and Washboard Blanks.

ZINCS FOR LECLANCHE BATTERY.

Best Bronze, Babbitt Metals, Brass and Aluminum Castings



R. A. HART.

No better counter

4 Wheel, \$3.00 5 Wireel, \$3.25

BATTLE CREEK, MICH. For sale by David Williams Co., 232 William St., N.Y.

HENDRICKS BROTHERS

Belleville Rolling Copper

Braziers' Bolt and Sheathing

COPPER WIRE AND RIVETS. COPPER

Ingot Copper, Block Tin, Spelter, Lead, Antimony, etc. 49 CLIFF ST., NEW YORK.

THE PLUME & ATWOOD MFG. Co.,

Sheet and Roll Brass

${f wire}$

PRINTERS' BRASS, JEWELERS' METAL, GERMAN SILVER AND GILDING METAL, COPPER RIVETS AND BURRS.

Pins, Brass Butt Hinges, Jack Chain, Kero. sene Burners, Lamps, Lamp Trimmings, &c.

29 MURRAY ST., NEW YORK. 144 HIGH ST., BOSTON. 199 LAKE ST., CHICAGO.

ROLLING MILL : THOMASTON, CONN. WATERBURY, CONN

OVILL MFG. CO

SHEET, WIRE, TUBES, Hinges, Buttons, Lamp Goods, Nipples, Pumps and Oilers for Bicycles, Braziers' Solder.

FACTORIES, WATERBURY, CONN.

DEPOTS: CHICAGO, NEW YORK, BOSTON

JOHN DAVOL & SONS,

AGENTS FOR

Brooklyn Brass & Copper Co., DEALERS IN

COPPER, TIN, SPELTER, LEAD, ANTIMONY.

100 John Street, New York.

Arthur T. Rutter,

SUCCESSOR TO

WILLIAM S. FEARING,

256 Broadway,

New York.

Sheet Brass, German Silver, Copper, Brass and German Silver Wire, Brazed and Seamless Brass and Copper Tubes, Small Tubing a Specialty. Brass and Copper Rods, Brass Ferrules. Sheet and Ingot Copper; Spelter, Tin, Antimony, Lead, etc.

THE BRIDGEPORT BRASS CO.

BRIDGEPORT, CONN.

19 Murray St., New York.

85-87 Pearl St., Boston. 17 N. 7th St., Philadelphia.

Brass AND Copper

SHEET TUBING

Lamp Goods of all Kinds BRASS AND COPPER GOODS In Great Varieties.







ELEPHANT BRAND PHOSPHOR-BRONZE



REGITRADE MARKS THE PHOSPHOR BRONZE SMELTING CO. LIMITED. 2200 WASHINGTON AVE PHILADELPHIA. ELEPHANT BRAND PHOSPHOR-BRONZE INGOTS, CASTINGS, WIRE, RODS, SHEETS, ETC. - DELTA METAL-CASTINGS, STAMPINGS AND FORGINGS ORIGINAL AND SOLE MAKERS IN THE U.S.

DELTA METAL.

Company, Zinc Illinois

MANUFACTURERS OF

Spelter, Sheet Zinc, Sulphuric Acid and Acid Phosphate.

W. FISHER, Agent, S1-S3 Fulton St., New York City. Telephone, 139 John.

PERU. ILL.



OILLESS BEARINGS.

A strong letter of commendation from a firm whose reputation is the manufacturers of the celebrated "PEARLINE."

New York, Nov. 26, 1897.

North American Metaline Co., 43 Third St., Long Island City, N. Y.

Gentlemen: Your favor of 20th inst. received; in reply are pleased to sny that
your Metalined Bushings have given us entire satisfaction. We first applied them
in 1886 or '87 under very trying conditions, put them in fast running loose pulseys
with high tension belt, ard they gave perfect satisfaction. Since then, we have
extended their use throughout our works, and they have given satisfaction where
ever we have placed them.

Very truly yours.

JAS. PYLE & 80 N.4.

POR great Tensile Strength, Elasticity and Elongation, coupled with unusual Non-Corrosive qualities,

CASTINGS AND

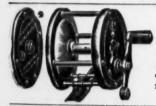
made from

PARSONS MANGANESE

cannot be excelled. Write for particulars.

SOLE MAKERS

THE WILLIAM CRAMP & SONS SHIP and ENGINE BUILDING CO., PHILADELPHIA, PA.



Has sold 2,000,000 standard Fishing Reels in 12 years to

Domestic and Foreign Jobbing trade and will mail you any Reel you may select from our illustrated catalogue on receipt of list price, and if not satisfactory will, on return of Reel refund the money. Catalogues mailed free on application.

THE ANDREW B. HENDRYX Co., NEW HAVEN, CONN.



Best Anti-Friction Metal for all machinery bearing. For high speed and heavy crushing weight it has requal.

THEO. HIERTZ & SON, Sole Manufacturers,

30th St. and Park Ave., St. Louis, Mo. ufacturers all grades Babbitt Metals, Solder, Bar Tin, Bar Lead, Lead Car Seals, Pig Tin, Pig Lead, Antimony, Copper, Spelter, etc.

GRAY IRON, BRASS, ALUMINUM AND BRONZE CASTING OF THE VERY BEST QUALITY.

Very much time saved by using clean and soft castings. A trial will convince you. Pickets Rosettes for wire workers, catalogue of same. Nickel Plating and Japanning, setal Pattern ting, also Bronze Tablets and Aame Plates for Machinery to order. We invite correspondence.

JOHN W. CLARK, *********

ALBANY, N. Y.

II BROADWAY, NEW YORK.

EUROPEAN ACENTS:

C. S. HENRY & CO., 12 Leadenhall St., London, E. C. Pres., Clarke Merchant, Pres. of Merchant & Co., Inc.

International Sprinkler Co.,

517 ARCH ST., PHILADELPHIA, PA.

Has Complete WET and DRY Systems! Fully endorsed by Insurance Companies. Protected by U. S. Patent Office.

NOTE-WE INSTALL SYSTEMS COMPLETE.

20 per cent. to 70 per cent. of Insurance Saved. A Southern Department has been established, with an office at S01 Prudential Building, ATLANTA, GA.

The American Metal Co.

Exchange Court Building, 52 Broadway, New York. P. O. BOX 953

COPPER, COPPER ORES AND MATTES.

Tin, Lead, Spelter, Antimony, Nickel, Aluminum, Bullion, Iron.

ADVANCES MADE ON CONSIGNMENTS.

AGENTS FOR

HENKY R. MERTON & CO. London, Birmingham, Manchester and Glasgow, METALLGPSE USCHAFT, Frankfurt-on-Main WILLIAMS, FOSTER & 1.0., Ltd., Swansea, Eng. SOCIETE LE NICKEL, Park, France, BALBACHSMELTING & KEFINING CO., New ark, N. J.

PHOSPHOR-TIN

BY USING MY PHOSPHOR TIN MANUFACT URERS CAN MAKE ANY DESIRED GRADE OF PHOSPHOR BRONZE THEMSELVES. BY THE SIMPLE PROCESS OF MELTING MUCH CHEAPER THAN THEY ARE NOW TO BE HAD IN THE MARKET. NEW OR OLD COPPER CAN BE USED. FOR CIRCULARS AND PRICE ADDRESS HALK & NAUMANN NEW-YORK SOLE AGENTS FOR THE U.S. AND CANADA PEAR



Shipped

is

X

(ENT Phosphorized Metal Co.

Philadelphia, Pa.

Manufacturers of High Grade Phosphor Tin, Phosphor Bronze, Phosphor Copper, Manganese Copper.

LOWEST MARKET PRICES.
CORRESPONDENCE SOLICITES.

CP 2 STREET, to 6 Ē STOCK TO Iron NEW ORDER Pipe Sizes W

CURVED CORRUGATED IRON

ROLL CAP

SEND FOR CATALOGUE. AND PRICES.

B. M. MOKEUMSTERMENS

THE IRON AGE.

PATENT.

BLACK

GALVANIZED

V. CRIMPED EDGE IRON. THE YOUNGSTOWN IRON & STEEL ROOFING COMPANY. JOHN O.PEWS

IRON & STEEL WEATHER BOARDING

MANUFACTURERS OF ALL KINDS OF IRON & STEEL ROOFING & SIDING

SPECIAL BRAND MAHONING

YOUNGSTOWN, OHIO.

W. H. THOMSON & CO., Philadelphia, Pa

Chicago Office

810-811 New York Life Bldg.

PATENT COLD . . . GALVANIZING PROCESS.

ALE COCHRAM, PROBLEMENT

We notify our customers and other Plant to a Capacity of "SIX" 25
foot tanks and will be equipped
handle any kind of heavy
work up to 25 feet in length,

and also, with our special patent machinery and devices, small work of every description, such as nails, screws, bolts, etc., at very low prices. Special prices made for yearly contracts arge ders.

We furnish plants of any size and description and grantshop right and other lialty basis.



108-110 W. 11th St.

346 Broadway, New York.

.ang Lay" Wire Rope.



Wires and strands twisted in the same direction. Why? To get a longer bearing surface on the wires Advantages claimed are greater flexibility and longer life. There's a trick in making it, but we sell it at the same price as ordinary wire rope.

If you don't want this we can give you the regular lay, and also ropes for special applications. Also equipments for Wire Rope Tramways, Cable Holst Conveyors, Surface and Underground Haulage, etc.,

MANUFACTURED BY

THE TRENTON IRON CO., - Trenton, N. J.

New York Office-Cooper, Hewitt & Co., 17 Burling Slip. Chicago Office-1114 Monadnock Building.

CLARK & COWLES.

Plainville, Conn.

RIVETS. METAL PUNCHING, SPR

Press Work a Specialty.

Your Dies or we can make Dies for you Send sample or sketch for price.



MANILA ROPES, LEATHER BELTS. GEARING.

Get Catalogue T. ronsides Paints for Roofs, Boiler Fronts, Stacks and All Metal Work.

THE IRONSIDES CO.. Columbus, O., U. S. A.

SILAS HOWE, ENOCH PETERSON, Pres. & Treas. V. Pres. & Secy

The Wm. D. Gibson Co.

MANUFACTURERS OF

Coiled and Flat Springs.

Any required shape or size. Made to sample or specification. Oil tem-pered Crucible Cast Steel Springs for Machinery a specialty.

23-27 North Clinton St., CHICAGO. ILL.

WE ARE THE ONLY MAKERS OF

Columbia Brand Phosphor Tin

Bronze Ingots.

USE SYRACUSE BAB

It is the Best for all Machinery Bearings. PRICE REASONABLE. QUALITY GUARANTEED.

SYRACUSE SMELTING WORKS. SYRACUSE, N.Y. MONTREAL, CANADA.

Nickelize

Is a highly polished. NON-COREOSIVE metal packed with paper between each sheet. Is being used for Wash boards, House Numbers, Reflectors, Buttons, Name-plates, Stove boards, Refrigerator Lining, Fruit Jar Caps. Can be soldered, stamped and bent to the sharpest turn, retaining a polish like mickel-plated brass. Zinc Polished for the Trade AMERICAN NICKELOID CO., PERU, ILLINOIS.



For All Purposes

THE HARRINGTON @ KING PERFORATING CO., Chicago, Illinois

Main Office and Works, 209 N. Union Street

Eastern Office, 284 Pearl Street, New York

BABBITT METAL FOR ROLLING MILL AND OTHER MACHINERY. BRASS INGOTS and SPELTER.

Smelters and Refiners. Brand: GOLDEN ROD. SCRAP METALS OF ALL CLASSES BOUGHT.

H. M. SHIMER & CO., 1128 Cherry Street, PHILADELPHIA, PA.

SPIRAL SPRINGS

We make a specialty of making to order only a superior quality of Cast Steel Wire Springs, either for extension or compre

or compression.

These Springs are all oil tempered and are made of an extra quality of wire, drawn specially for our own use, of the same grade of stock as we use for the Springs that we put in our Spring Scales.

JOHN CHATILLON & SONS.

85 to 93 Cliff St., and 12 Jacob St., NEW YORK CITY.

Established 1835.



PRICE and QUALITY are the two essentials.

MY No. 3 BEARING METAL HAS STOOD THE TEST AND I CAN PROVE ALL I CLAIM FOR IT.

Send for

I. SHONBERG, 172 Hudson Street, N. Y., Manufacturer and Dealer in Metal.



00000000000-0000000000

NEW HAVEN WIRE MFG. CO.,

IN GREAT VARIETY NEW HAVEN, - CONN. 8

MORGAN SPRING CO Worcester, Mass.

SMALL SPRINGS

OF EVERY DESCRIPTION - MADE BY -

THE WALLACE BARNES CO.,

Bristel, Conn., U. S. A. Established 1857.

Flat or Round Wire, Steel or Brass,
COLD ROLLED STEEL
Kept in Stock. J03 to J49 in. thickness.
Springs Enameled or Plated.
Bend Samples and Write for Quotations.

OIL TEMPERED SPRINGS VAGRICULTURAL IMPLEMENTS AND SPECIAL HINGS - MADE FROM CRUCIBLE SHEET STEEL SABIN MACHINE CO. MONTPELIER V

GRISWOLD WIRE CO.,

MANUFACTURERS OF

CROSS HEAD, IMPROVED, MONITOR, HOOE AND SINGLE LOOP

STEEL WIRE BALE TIES.

Wire Straightened and cut to lengths, Wire, Wire Nails, etc.

BRADDOCK, PA.

Cary Spring Works,

240 and 242 W. 29th St., N. Y. City.

REAND SPRINGS

OF EVERY DESCRIPTION.

E. JENCKES MFG. CO.

PAWTUCKET, R. I. CRESCENT COAT AND HAT HOOKS, BRIGHT WIRE GOODS,
COTTERS AND KEYS,
SPECIAL WIRE WORK TO ORDER. Sole Selling Agents, JOHN H. GRAHAT & CO.,

ELECTRO GALVANIZING WORKS BLACKMAN & KING. Specialty made of Galvanizing

Steam, Water and Drainage Fittings, Nails, Screws, Bolts and Nuts, Springs, All Kinds of Castings and Wrought Iron Work.

80 | Greenwich St., Bet. Jane and 12th Sts., New York.

ELECTRO GALVANIZING

ON ALL KINDS OF

Iron, Steel, Screws, Nails, also Steam and Drainage Fittings.

EMPIRE PIPE BENDING AND SUPPLY CO., 23g to 283 Park Ave., BROOKLYN, N. Y.

Telephone " B Main."

R. H. WOLFF & CO., Ltd.,

MANUFACTURERS OF

ALL FINE GRADES OF COLD ROLLED STEEL,

For Corset, Band Saws, Clock and Watch Springs and all parts thereof, and all other special purposes.

FINEST QUALITIES OF STEEL WIRES,

Round, Square, Flat and all other shapes, for Cables, Wire Ropes, Spokes, Needles, Piano Wire, and all other special purposes, tempered and untempered, etc.

Works: 118th, 117th and 116th Sts. and East River,

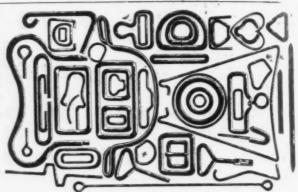
NEW YORK CITY.



WE make all kinds of Sheel Metal goods as well as Wire goods. All our work is done by Automatic Machines, and consequently cheap in price and good in quality.

R.C. JENKINSON & CO.,

289-297 Washington St., NEWARK, N. J.



A few of the Wire shapes we have made.

"AMERICAN" Second TRANSMISSIO

THE
AMERICAN
MANUFACTURING
COMPANY,
65 Wall Street, NEW YORK.

THE AMERICAN MANUFACTURING CO.

LITTLE BLUE BOOK ON

ROPE TRANSMISSION,"
Second Edition-AUGMENTED.

ROPE.

● 99999999999 9 Established 1848.

DUNBAR BROTHERS,

Steel (Tempered) Springs

ALL KINDS OF

SMALL SPRINGS

MADE FROM

SHEET STEEL and

STEEL and BRASS WIRE.

BRISTOL, CONN.

WM. McFARLAND,

IRON FOUNDER,

TRENTON, - N. J.

CHILLED CAST WIRE DIES

A SPECIALTY.

Any Size or Style Made at Short Notice.

T E D

WIRE GOODS COMPANY,

Worcester, Mass.

Hardware and Kitchen Wire Goods.

Specialties to Order.

EVELYTHING IN WIRE

WATERBURY ROPE CO.

FACTORIES, Brooklyn

OFFICE, 60 South St., N. Y.

MAKERS OF

WIRE ROPE

OF ALL KINDS.

Also Manila, Sisal, Russia and
American Cordage and Binder Twine.

WIRE IN Steel

Straightened and Cut
All Lengths.

Screw Rods, WOOD SCREWS, Iron and Brass-

TRANSOM LIFTERS.

READING SCREW CO., Norristown, Penna.

THE STEWART WIRE COMPANY. - - Office and Works, EASTON PENNA.

BRIGHT ANNEALED COPPERED TINNED



LIQUOR BRIGHT SPRING SCREW

Wire Straightened and Cut to Specified Lengths.



BRODERICK & BASCOM ROPE CO.,

PATENTSTEEL S

THE MOST DURABLE ROPE MADE; IT HAS NO EQUAL,

A. LESCHEN & SONS ROPE CO.,

PATENT FLATTENED STRAND

TOUGH and STRONG.



SECURE.

SAFE

and

1848

OVERHEAD WIRE ROPE—TRAMWAYS AND CABLEWAYS
9:20-9:22 NORTH MAIN ST., ST. LOUIS, MO.
8cauch Office. 47-49 South Caual St., Chicago. Ills.

1848.



INSULATED WIRES and CABLES. HARD and SOFT DRAWN COPPER WIRE. Warerooms: 50 DEY STREET, NEW YORK. Works: WILKESBARRE, PA.

WILLIAMSPORT WIRE ROPE CO.,

MANUFACTURERS OF TRONS GRUCIBLE GAST STEEL

OF ALL KINDS AND SIZES AND FOR ALL PURPOSES.



Macomber & Whyte Rope Co.,

WIRE ROPE

Manilla Rope, Blocks. Sheaves, Galvanized Wire, Steel Strand.

19 South Canal Street, CHICAGO.

OUR TRADE MARK PROTECTS YOU.



The Kidd Bros. & Burgher Steel Wire Company

McKEE'S ROCKS, PA.

Role Manufacturers of KIDD SPECIAL DRILL RODS; NEEDLE WIRE AND HIGH GRADE STEEL WIRES

HOWSON AND HOWSON

Counsellors at Law, Solicitors of Patents.

PHILADELPHIA

West End Bldg., 32 So. Broad St. NEW YORK

Potter Building, 38 Park Row, WASHINGTON

National Union Bldg., 913 F St.

PATENTS

U. S. and Foreign Secured.

Trade Marks and Copyrights. Twenty Years' Experience. Send model or sketch and brief description of your invention and secure report as to patentability. Expert searches and opinions as to Scope, Validity and Infringement. Patent Causes Prosecuted and Defended. Practice in U. S. Supreme, Circuit and Circuit Appeals Courts, and U. S. Patent Office.

ratefit Causes Prosecuted and Defended, Fractice in U. S. Supreme, Circuit and Circuit Appeals Courts, and U. S. Patent Office.

Send for "Plain Words about Patents," Free PATENT PRACTICE EXCLUSIVELY-References Furnished on Application.

E. B. STOCKING, Attorney at Law, 611 F ST., N. W., WASHINGTON, D. C.

Estey Wire Works Co.

65 FULTON St., NEW YORK,

WIRE CLOTH & WIBE WORK

Bank and Office Railing, BRASS AND IRON WORK, RIDDLES AND SCREENS.

SEND FOR CATALOGUES.

GOEPEL & RAEGENER

Counselors at Law, Registered Patent Agents,

290 BROADWAY, - Dun Building, - NEW YORK.

Special experience in and connections for obtaining Patents in foreign countries.

JANNEY, STEINMETZ & CO., Seamless Cold Drawn Steel Shells, Cylinders and Tanks, for Air, Water, Steam, Gas, Sods, Ammonia or Fluids under pressure and exple-

sives.

Scamless Tubing, Heavy Section Tubes, Hydraulic Porgings for Cream Separator Bowls.

INGOT ALUMINUM for STEEL MAKERS.

DREXEL BUILDING, Philadelphia.

H. P. & H. F. WILSON,

WIRE BALE TIES

For Baling Hay, Straw, Jute. Moss, Rags. Paper Stock and all Compressible Material.
577-579 Tenth Ave., - New York City.

Hard Goiled Galvanized Steel Wire for Fencing.



We make and sell in the roll to the hardware trade Hard Galvanized Coiled Wire for farm fence curposes Has twice the strength of soft wire; the coil perfectly provides for expansion and contraction, and costs about the same as the soft.

THE FROST WIRE FENCE CO.,
Welland, Ont., Canada.
WIRE FENCE. COILED WIPE STEEL GATES.

THE SUMMIT WIRE CO.

CUYAHOGA FALLS, OHIO.

Manufacturers of

WIRE

N 30 30

TINNED BROOM WIRE,
MATTRESS WIRE,
LANTERN WIRE,
BRIGHT MARKET WIRE,
COPPERED MARKET WIRE,
ANNEALED STONE WIRE.

36 36 36

WIRE STRAIGHTENED AND CUT TO LENGTHS.

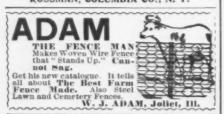
Rossman's Lawn Ferce.



Made especially for Lawns, Parks, Cemeteries and all Public and Private Grounds. Has no equal Thoroughly Galvanized and made of best Besse mer No. 6 Steel Wire. Cheaper and just as substantial as Iron Fence.

Write for Catalogue.

Rossman Woven Wire Fence Co., Rossman, columbia co., N. Y.





WE WANT AGENTS TO IRON FENCE SELL OUR IRON FENCE



of Iron Fence in th U.S. Architectural an Ornamental Iro Work, Jails, etc. Write for Catalog 3

THE STEWART IRON WORKS, CINCINNATI, OHIO, U.S. A

GEO. W. PRENTISS & CO., - HOLYOKE, MASS.

MANUFACTURERS OF

Iron and Steel

WIRE

of every description for General and Special Purposes.





LAWN FENCE, WINDOW GUARDS, OFFICE RAILING, TREE GUARDS, FARM FENCE.

Bend for Catalogue and Discount Sheet,

UP-TO-DATE MFG. CO., - TERRE HAUTE, IND., 989 No.Tenth Street.

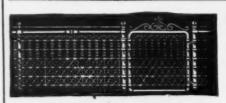
DWIGGINS WIRE FENCE CO. Anderson, Ind.

Wire Fencing, Ready Made. for

Lawn, Farm and Railroad.

Write for Catalogue, Agents Wanted.





ORNAMENTAL FENCE!

25 different designs, they are all steel and cheaper than wood fence. Special prices to Churches and Cemeteries. Write us for catalogue.

KOKOMO FENCE MCH. CO., Kokomo, Ind., U. S. A.

ANYTHING IN ARTISTIC AND LIGHT

IRON, WIRE AND BRASS WORK

Buch as Iron and Wire Fences of every description, Office and Bank Railings, Window Guards, Fire Escapes, Iron Stairways, Roof Crestings, Iron Doors and Shutters, Flower Stands and other Floral Designs, Iron Vases, Urns, Chairs and Settees, General Builders' Iron Work, etc. etc. 100-page illustrated catalogue, with close prices, sent free.

ORNAMENTAL IRON & WIRE CO.,

Chattanooga, Tenn.

Largest concern of the kind in the entire South.

ALBERT BERTHE,

Iron Work, Single and Double Gates, Balconies and Railings, Cemetery Enclosures, Green Houses of every description in general iron work.

26-28 Poplar St., - Jersey City, N. J.



Hann's Latest Improved Watchman's Time Detector

With Safet" Lock Attachment. Highest Award at Columbian Exposition.

This Clock is neat, thoroughly reliable and very durable. Cannot be tampered with. File moderate. Is adapted to 6, 12 or 18 statious, having a different sey for each. Resistering is done by numbers from 1 to 6, 1 to 12 and 1 to 18, each station having its number. Send for circulars, prices and further particulars.

C. NANZ & CO. 127 Duane St., New York, U.S.A.



WIRE FORMED TO ANY SHAPE.



We have modern machinery for this work.

Send Sample for Prices.

THE LUDLOW-SAYLOR WIRE CO.,

St. Louis, Mo.



Cleveland WIRE

CLEVELAND, O.

Oil tempered machinery SPR

WIRE a specialty.

J. B. & J. M. CORNE

Annealing Pots for Wire Manufac

We make a specialty of an extra strong, heat-resisting metal peculiarly adapted for this purpose.

WRITE FOR PRICES.

WORKS: West Point Foundry, Cold Spring-on-Hudson. OFFICE: 26th Street and 11th Avenue, New York. New York City.





SPRING COTTERS AND KEYS.

All Kinds of Special Wire Goods Made

M. S. BROOKS & SONS, CHESTER, CONN.



THE WAGGONER WATCHMAN CLOCK.

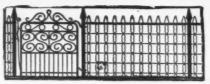
Latest, Simplest, Best.

REDUCES INSURANCE.

Gives a printed record on the back of the dial of the watchman's movements. The record is hidden, the dial cannot be stopped; any attempt to manipulate the clock is recorded on the dial.

Has ALARM features that are alone worth its cost. You throw sway good tools and buy new types that do more work. Why not do the same with your" out of date" type of watchman clock, and get the best protec

The Waggoner Watchman Clock Co., GRAND RAPIDS, MICH., U. S. A.



HARTMAN Steel Hou Picket Fence

For Lawns, Parks, Cemeteries, School Grounds; also Tree Guards, Window Guards, Wire Mats, Woven Wire Fence,

HARTMAN MFG. CO.,

Of Ellwood City, Pa.

N. Y. Office, 309 B'way, N. Y. City.

Conductor Pipe.

Eave Trough Elbows and Hangers

ALL STYLES OF PAINTED AND GAL-VANIZED ROOFING AND SIDING.

The Kanneberg Roofing

and Ceiling Co.,

Canton, Ohio.

ARROW BRAND

ASPHALT READY ROOFING.





0000000000 Garry Iron and Steel Roofing Co.

Pneumatic Revolving Cranes. Car Jacks. Air Hoists. Painting Machines.

Cor. Coe and Lake Sts., CLEVELAND, OHIO.

ART METAL WORK IN BRASS, STEEL AND IRON. E. T BARNUM, MICH.

See Adv. 1st Each Month.



American Steel & Wire Co.

Empire Bldg.

The Rookery.

8 and 10 Pine St.

Steel Plates and Sheets.

Bar Steel—All Shapes.

Cold-Drawn Steel Shapes.

Beams, Channels, Angles.

WRITE FOR PRICES



SPRINGS,

Extension—Compression—Torsion.

Coiled, Spiral and Flat Springs for every purpose, made from our own special steels in accordance with specifications.

Round or Flat Springs to Order

TO MEET ALL REQUIREMENTS.

Write for Prices to

American Steel & Wire Co.

MILLS CONTINUOUS

FOR BILLETS, MERCHANT BAR, RODS, HOOPS, AND COTTON-TIE.

WIRE-DRAWING MACHINERY---FOR STEEL, COPPER OR BRASS.

MORGAN CONSTRUCTION COMPANY.

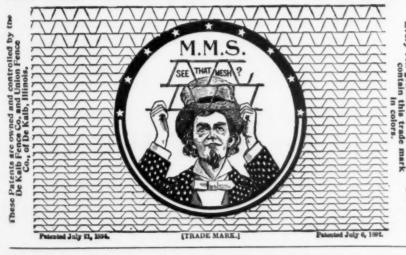
WORCESTER, MASS., U. S. A.

MODERN WIRE, WIRE NAIL & CHA

complete by

PLANTS.

The Turner, Vaughn & Taylor Co., CUYAHOGA FALLS, OHIO, U. S OHIO, U.S. A.



Requires but few posts and no top or bottom rail. Is stronger and better, and completed fence costs from 40 per cent. to 50 per cent. less than any other.

Also a large line of Hog, Sheep, Field and Cattle Fencing to meet all requirements, and Steel Web Picket Fencing with gates, po Fencing with gates, posts and rail, for

DE KALB FENCE CO...

Main Office and Factories:

DeKalb, Illinois, U.S.A.

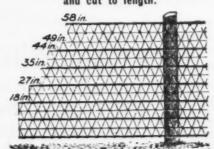
Selling Agents:

Rotherham, Wood & Co., Melbourne, Australia. Buhler & Co., Buenos Aires, Argentine Republic

Branch Offices and Warehouses:

154- 56 First St., San Francisco, Cal. 301 Delaware St., Kansas City, Mo. 171 Main Street, Dallas, Fexas.

Barbed Wire Staples, Steel Wire Nails, Steel Bale Ties, Annealed, Bright and Galvanized Market Wire, Woven Wire Fence, Copper, Iron and Steel Rods, Special Wires and Wire Straightened and cut to length.



DILLON-GRISWOLD WIRE CO.

STERLING, ILLS.



KILMER'S LAWN FENCE

10 000 feet erected in Lincoln Park. Handsome, burable and Cheap. Never Sags or Gets Loose. wanted in every County. Fencing, Bale Ties, Nails, Catalogue.

Kilmer Wire Ilfg. Co., Chicago.



Wire Cloth, Netting, Fencing and Perforated Metal.

We Manufacture a Complete Line of these Goods, Including

"CLINTON" Brand.

Painted Window Screen Cloth Galvanized Poultry Netting. Wire Lath. Woven Wire Fence. Electrically Welded Wire Fer.ce.

"SILVER FINISH" Brand.

Galvanized Poultry Netting.

Galvanized Window Screen Cloth.

Galvanized Fruit Drying Cloth.

PERFORATED METAL FOR Coal, Ore and Gravel Screens, Spark Arresters, Klin Floors, Filter Press Plates, Centrifugal Machines, Fanning Mills, Etc., Etc.

CLINTON WIRE CLOTH CO.,

CLINTON, MASS.

NEW YORK. _____

Pearl Wire Cloth.

Galvanized Steel Wire Cloth.
Galvanized Wire Poultry
Nerring.
"Cottage" Lawn and Garden
Fencing.
"G & B" Web Wire Fencing.

Sieves, Riddles, Screens. Gilbert's Rival Ash Sifter. House Furnishing Wire Goods.

GATES. FENCING TOOLS

STABLE FIXTURES, RAILINGS, WINDOW GUARDS.
WIRE LATHING WITH HAMMONDS METAL FURRING. DIDESTANDLEADING MANUFACTURERS OF GALVANIZED WIRE GOODS

HICAGO.

Cactories: { Georgetown, Conn. Wireton (three mile from Chicago), Ill.

Established 1818.

WRIGHT & COLTON WIRE CLOTH



Coppered. Bright and Annealed.

Cold Rolled Flat, and Straightened and Cut.

ECIAL WIRES PREPARED FOR VARIOUS PURPOSES.

Tinned, Mattress, Broom and Lantern Wire.

Annealed, Tinned and Galvanized Stone and Market Wire.

WORCESTER, MASS. 79 Lake St., CHICAGO, ILL.

PENNSYLVANIA''



This Cut almost speaks for itself—the device being so much like the human hand we at once the utility of the article.

AS A FRUIT PICKER IT HAS NO SUPERIOR.

It is made of Heavy Galvanized Wire, and Easily Adjusted to a Pole.

It has been sold for several years, and the demand as it is becoming known) is steadily increasing.

The difficulty of detaching fruit and securing it unbruised is apparent to every one so engaged.

This overcomes the difficulty, and saves the finest fruit, which commands the highest prices.

THE LOW PRICE AT WHICH IT IS SOLD

PRICE, PER DOZEN, IT WILL CATHER APPLES, PEACHES, PEARS, ETC.

EDWARD DARBY & SONS. - 233-235 Arch Street, Philadelphia. LIBERAL DISCOUNT TO THE TRADE.

Wire Netting, Wire Fencing, Wire Cloth, Wire Lathing,

COAL AND SAND SCREENS, FRUIT DRYING CLOTH. FLY-SCREEN CLOTH.



THE ROEBLING STANDARD FIRE-PROOF CONSTRUCTION. IRON, STEEL, GALV'D, BRASS. BRONZE AND COPPER CLOTH.

HARDWARE GRADES-

The New Jersey Wire Cloth Co., Trenton, N. J.

NEW YORK

WICKWIRE BROTHERS, CORTLAND, N. Y.

MANUFACTURERS IOF

WIRE CLOTH AND NETTINGS.

Cortland Wire Wickwire Wire White Metal Finish Wire Wickwire Hex. Wickwire Hex. Wickwire Netting.

Made from Hard Drawn Steel Wire.

Made from Hard Drawn Bronze Wire. Made from Hard Drawn Galvanized

Galvanized Before or After Weaving.

TINNED, BRIGHT BLUED, BRASS, COPPER WIRE CLOTH, FOR SPECIAL PURPOSES.

CORN POPPERS, DISH COVERS, METALLIC AND SQUARE COAL SIEVES, FLOUR SIEVES.

NATIONAL WIRE CORP., NEW HAVEN, CONN.,

WIRE, WIRE RODS AND WIRE NAILS

Fence, Market, Galvanized, Screw, Bolt, Telephone and Telegraph WIRE

Straightened and Cut Wire

1 in. and smaller.

Special Wire

Eastern Agents, JOHN WALES CO., 141 High St. Boston, Mass.

Send for Prices.

MICHICAN WIRE CLOTH CO.,

MANUFACTURERS OF WIRE CLOTH OF ALL KINDS

From BRASS, COPPER, STEEL, IRON, GALVANIZED, TINNED and BRONZE WIRE Including PAINTED, GALVANIZED and BRONZE WINDOW SCREEN CLOTH.

ESTABLISHED 1863.

WRITE FOR CATALOGUE.

500 HOWARD ST., DETROIT, MICH.

ESTABLISHED 1828.

SPENCER WIRE COMPANY, Worcester, Mass.

Manufacturers Iron and Bessemer Steel Wire of all kinds.

FINE WIRE A SPECIALTY.

Mills at Worcester and Spencer, Mass.

No order too small for our best attention. Write us for prices and particulars.

1879

RIPLEY & BARTLETT,

ACKS

PLYMOUTH, MASS., U.S.A.

HIGHEST SPEED

INQUIRE FOR PRICES. Tack Machines

Ryan's Patenta.

WM. A. SWEETSER, 89 Montello St., BROCKTON, MASS.

NEW FREEDOM WIRE CLOTH CO ...

MANUFACTURERS OF

"SUMMIT" BRAND

SCREEN WIRE CLOTH.

Main Office and Works, - - NEW FREEDOM, PA.

HARVEY HUBBELL. Brass and Iron Tapping, Screw Slotting, Machine Screws Screw Assembling MACHINERY & TOOL Nuts and Washers and Riveting Machines. BRIDGEPORT, CONN. Agents, Chandler & Farquhar, Boston Manning Maxwell & Moore, New YORK, CHICAGO.

SAM'L HALL'S SONS,

Established 1839.





MANUFACTURERS OF SUPERIOR QUALITY

Machine Bolts, Lag Screws, Washers.

BRADDOCK MACHINE & MANUFACTURING CO.

Engineers, Founders and Machinists. BRADDOCK, PA.

Rod Mill Plants, Wire Mill Plants, Nail Machines,

Barb Wire Machines, Galvanizing Plants.

Wire Drawing Machinery, Flange and Compression Couplings, Hangers and Pillow Blocks, Pulleys and Shafting, Power Transmission Machinery, Air Compressors.

NUT & WASHER MFG. CO.,



Wrought and Steel Plate Washers, Felloe Plates, Burrs, &c.

CORRESPONDENCE REQUESTED.

National Elastic Nut Co., MILWAUKEE, WIS.

We make a specialty of Square and Hexagon Hot-Pressed Nuts (Blastic and Common); Machine Bolts, Track Bolts, etc., to large users at lowest prices. Our Blastic Self-Locking Steel Nut never works loose, and is the strongest, best and cheapest Nut on the market. Our Elastic Nut Track Bolt makes the best Rall fastening. Write for prices.

THE POSITIVE EXPANSION BOLT



CAN'T SLIP."

Mrd. by DANIEL O. SEARAN & CO.

1685 Hutchinson oi., Phila., Pa. Write for
For sale by NEAL & BEINKER, IS WAFFER St., No.



Niagara Screw Co.,

Makers of SET and CAP SCREWS, STUDS, Etc.

1880.

The Plymouth Mills.

RIVETS and TACKS, Plymouth, Mass.

IF IN WANT OF

TACKS, NAILS, STAPLES, &c.

MILWAUKEE TACK CO., Milwaukee, Wis. WILSON & SMITH, Worcester, Mass.



Metal Punching and Die Work. Nuts M Washers

SPECIALTIES IN LINE OF PRESS WORK.

All kinds of Bolts, Lag Screws, Rivets, Washers and odd Bolt Work.

Write for our Prices.



AMERICAN BRIDGE CO.

General Offices:

100 BROADWAY, N. Y.

DESIGNERS AND BUILDERS OF

All Classes of

Metallic Structures.

We have decided to carry at all our plants a large stock of Raw Material, from which we can furnish with great promptness any ordinary order for Steel Bridges, Roofs, Buildings, Columns, Girders, Beams, Channels, Angles, Plates, etc., etc.

Branch Offices and Works:

Albany, N. Y.
Athens, Pa.
Boston, Mass.
Buffalo, N. Y.
Baltimore, Md.
Butte, Mont.
Columbus, O.
Chicago, Ill.
Canton, O.
Cleveland, O.
Denver, Colo.

Duluth, Minn.
East Berlin, Conn.
Elmira, N. Y.
Groton, N. Y.
Horseheads, N. Y.
Lafayette, Ind.
Milwaukee, Wis.
Minneapolis, Minn.
New Orleans, La.
Pencoyd, Pa.
Philadelphia, Pa.

Pittsburgh, Pa.
Rochester, N. Y.
Seattle, Wash.
San Francisco, Cal.
Salt Lake City, Utah.
Sidney, N. S. W.
Trenton, N. J.
Wilmington, Del.
Youngstown, O.
London, Eng.



IRON AND BRASS RIVETS

STUDS. PINS. SCREWS. &c.,

For Manufacturers of Light Hardware.

AKE & JOHNSON,

WATERBURY, CONN.



CROSSING TACK CO., Grand Crossing, Chicago, III., U. S. A.



STAPLES.

Our Rod and Wire Mills are now in full operation and we are well equipped to furnish

BESSEMER HEARTH. OPEN

and

SHAPES!

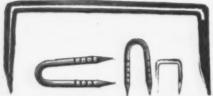
For information concerning RODS and WIRE, address

TELEPHONE, 2529 CENTRAL.

D. PRATT, 91 Lake Street, CHICAGO.

H. Titchener & Co.,

BINGHAMTON, N. Y., Have made STAPLES



For fifteen years.

Know how to make 'em right Pactories; {Binghamten, N. Y. Chicage, III.

"DIAMOND" EXPANSION BOLT.



ONLY 2 PARTS. Simplest Expansion Bolt in the market. HENRY B. NEWHALL, 26 Cortlandt St., N.Y Tel. 224 Cortlandt.

EXPANSION BOLTS.



The Best Bolt on the Market. MFD. BY

THE MCCABE HANGER MFG. CO. 883-843 West 22d St., N. Y. WRITE FOR PRICES.

H. J. MILLER, Bridgewater, Mass.

R COBB & DRE

FACTORIES:

PLYMOUTH, MASS. ROCK FALLS, ILLS.

IRON, BRASS and COPPER RIVETS, NAILS and DOUBLE POINTED TACKS.

STAPLES, BURRS, WASHERS.









oor

Winsted, Conn. Pacific Coast Office, 105 Front St., San Francisco, Cal.

In writing for fre

ittsburgh Screw & Bolt Co.

MAKERS OF



C

Set Screws, Cap Screws, Coupling Bolts, Milled Stud Bolts. Semi-finished Nuts, Case-hardened Nuts.

Also

Special Work in Iron, Liberty Ave. and 25th St., on Screw Machines. .

Square Head Bolts. Hexagon Head Bolts. T and Special Head Bolts, Rough Studs, etc., etc.

OFFICE AND WORKS:

Pittsburgh, Pa.



ESTABLISHED 1836.

SHELTON COMPANY.

TACKS, SMALL NAILS. Etc., CARRIAGE. TIRE and STOVE BOLTS.

Factories, SHELTON, CONN.

NEW YORK OFFICE and WAREROOM, 64 READS ST.



1

The Milton Manufacturing Co.,

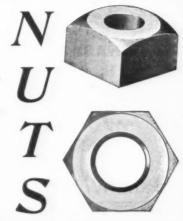
MILTON, PENNSYLVANIA.

Cold Punched PLAIN, CHAMFERED, SEMI-FINISHED AND CASE HARDENED

ALSO, HOT PRESSED

Wrought and Steel Washers.

Cold Punched Nuts a Specialty.





RHODE ISLAND TOOL CO. PROVIDENCE R. I.

> DROP FORGINGS: WRENCHES, TURNBUCKLES, EYE BOLTS.





Bolt and Rivet Clippers,

For Cutting off the ends of Bolts and Rivets, Liberal discounts to the trade.

CHAMBERS BROTHERS COMPANY,

52d St., Below Lancaster Ave., PHILADELPHIA, PA.

EVANS' PATENT EXPANSION BOLTS



that will draw your work down hard and make it fit to stone, brick or concrete. They are unequaled for fire proof buildings, electric light and power installments, iron railings, frames, fencing, balusters, awnings, etc. Agencies in all large cities,



Send for 3.F. H. EVANS, 596 to 614 Kent Ave., Brooklyn, N. Y. Sole Manufacturer.

STANYON-MILLER ENGINEERING COMPANY,

Rod, Wire and Nail Mills, Galvanizing Plants.

We Build Plants Complete from Ground Up.

ALL GRADES OF FINISHED

UTS

AND AUTOMATIC COLD PRESS NUT MACHINES.



DUNHAM NUT CO., Unionville, Conn., U. S. A.

I. MILTON PAYNE, Treas

WM. H. HASKELL MFG. CO.,

WM. H. HASKELL CO., and PAWTUCKET NUT CO., MANUFACTURERS OF



Bolts, Coach Screws, Set Screws, Cap Screws, Nuts, Washers, Chain

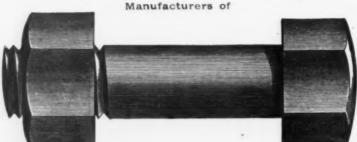
Links, Stirrups, Levers, Clearer Springs, Etc. PARTICULAR ATTENTION PAID TO SPECIAL WORK.

- PAWTUCKET, R. I., U. S. A.

Office and Works, 451 Main Street, -

CO., Worcester, Mass. **WORCESTER MACHINE SCREW**

SET, CAP AND MACHINE SCREWS.



STUDS FOR STEAM ENGINE, PUMPS, &c.



For tastening all kinds of structure to brick STEWARD & ROMAINE MFG. CO.

EXPANSION BOLTS



For fastening all kinds of structure to brick and stone work Patentee and M'I'r, ISAAC CHURCH,
Send for Catalogue A. Toledo, Ohio-

MACHINES FOR MAKING RIVETS, NUTS, AND FOR ROLLING HREADS. BUILT BY The WATERBURY FARREL FOUNDRY & MACHINE CO. Vaterbury, Coon., U. S. A.

Have You TRIANGLE FEED

for Tack Machines

IT IS A WONDER!

QUARANTEED INCREASE 25% IN SPEED. KIMBALL BROS. & SPRAGUE BROCKTON, MASS.

The New Britain Hardware Mfg. Co., New Britain, Conn., U. S. A.

MAKERS OF ALL KINDS OF

Special Machine Screws, Studs, Belts, &c. BICYCLE PARTS, SPECIAL HARDWARE.

Fattern Makers' Dowels and Emery Wheel Dre Electro, Brass and Nickel Plating

EXPANSION . BOLTS. PORT CHESTER BOLT & NUT CO..

PORT CHESTER, N. Y.

MANUFACTURERS OF

Cold Punched, Chamfered and Trimmed, Case Hardened and Semi-Finished

NUTS



Bicycle Supplies, &c., &c.

Tire Bolts a Specialty.



SCREW HOOK HINGES, HARROW TEETH, DRIFT AND BOAT SPIKES,



STRUCTURAL RIVETS, MACHINE AND TRACK BOLTS, Etc. M. LANZ & SONS. PITTSBURG. PA.

SET, CAP and MACHINE SCREWS,

Milled Coupling Bolts, etc.



Sole Airs, of the Genuine **Huntington Emery** Wheel Dresser. Hexagon Nuts. Pinished as Case Hards

Mass.



RUSSELL, BURDSALL & WARD.

PORT CHESTER, N. Y.

Manufacturers of



***CARRIA** BOLTS*

AND BOLTS OF EVERY DESCRIPTION.

The Commercial Organization of Factories.

A Handbook for the use of Manufacturers, Directors, Auditors, Engineers, Managers, Secretaries, Accountants, Cashiers, Estimate Clerks, Prime Cost Clerks, Bookkeepers, Draftsmen, Students, Pupils, &c.

By J. SLATER LEWIS.

Price Twelve Dollars.

FROM THE PREFACE.

The system of accounts presented in this book is the result of many years' close observation and practical experience, and is what may be termed an interlocking system, under which each and every account in a factory is brought into line monthly, and a general balance of the whole effected. It will be seen from an inspection of the diagrams A and B that the system is not only capable of diagrammatic proof, and may, therefore, be relied upon as being complete, but that it may be expanded or contracted as circumstances may require.

CONTENTS BY CHAPTERS.

Introduction. 1.—The Directors. 2.—The Manager. 3.—The Secretary. 4.—The Auditor. 5.—The Accountant. 6.—The Cashier. 7.—Correspondence Clerk. 8.—Supplies' Orders and Invoices. 9.—Customers' Orders and Invoices. 10.—Drawing Office. 11.—Estimating. 12.—Stationery. 13.—Advertising and Catalogues. 14.—The Works, Manager. 15.—The Inspector. 16.—The Entrance Gates and the Gatekeeper. 17.—The Stores and Storekeeper. 18.—The Warehouse and Warehouseman. 19.—Carriage. 20.—The Foremen. 21.—The Time-keeper and Job Clerk. 22.—The Paying of Wages. 23.—Establishment Charges. 24.—Stock Surveys. 25.—Diagrams and Curves. 26.—Diagrams of Manufacturing Accounts and Balan e Sheets. 27.—General View of Manufacturing Accounts. 28.—Synopsis of Transactions Relating to Purchases and Stores. 29.—Synopsis of Transactions Relating to Labor and Time. 30.—Synopsis of Transactions Relating to Manufacturing and Prime Costs. 31.—Synopsis of Transactions Relating to Warehouse Stock and Sales. 32.—Commercial Office (Orders and Invoices). 33.—Stores. 34.—Works and Job Office. 35.—Warehouse. 36.—Prime Cost and Ledger Clerk's Office. 37.—and Balancing Accounts. 38.—The Depreciation of Plant and Buildings. 39.—Recording Plant and Buildings. 40.—Foundry Accounts. 41.—Forge Accounts. 42.—Pattern Shop Accounts. 43.—Salaries and Expenses. 44.—Agents and Travelers. 45.—Pupils. 46.—Apprentices. 47.—Shipping. 48.—Samples, Patterns, &c. 49.—Miscellaneous. Appendix. Index.

SUPPLEMENTS.

Stock Requisition—Note Guard-Book, eight pages of diagrams, large oblong. A large diagram of Manufacturing Accounts, colored, 19½ x 27½ inches. A large diagram of Balance Sheets, colored, 20 x 27½ inches. Large Folding plate Diagram of Manufacturers' Accounts, colored. Folding plate, Staff Organization Diagram, 192 illustrations, diagrams, forms, orders, receipts, records, &c. Contracts and estimates. Travelers' order forms. Bills of Exchange, &c., &c. Very full index. 540

Price, \$12.00, Prepaid.

DAVID WILLIAMS COMPANY, Publishers and Booksellers, 232-238 William St., N. Y.

BOSTON BRIDGE WORKS,

BOSTON, MASS.,

ENGINEERS AND CONTRACTORS

FOR ALL KINDS OF

STRUCTURAL WORK.

Steel Buildings, Roof Trusses, Bridges, Etc., Large or Small.

SEND FOR ESTIMATE.

TO TO THE TOTAL OF THE PROPERTY OF THE PROPERT

JOHN S. CRAIG, Sec'v and Treas.

BUILDINGS DESIGNED AND ERECTED IN ALL PARTS OF THE WORLD.

Roof Frames, Trusses and Girders, Blast Furnaces and Steel Works, Cupolas, Ladles,
Converters, Eollers, Tanks and Heavy Plate Work, Gas Holders, Purifiers, etc.,
Open Hearth Furnace Casings, Chimneys, Riveted Pipe, Corrugated Iron.

RITER-CONLEY MFG. COMPANY, Pittsburgh, Pa., U. S. A.

NEW YORK OFFICE: 39-41 CORTLANDT STREET.

STEEL BUILDINGS New England Structural Co., Boston Office:

AND

BRIDGES.

Ornamental Iron Work. Bronze Work.

U

WORES.

18 P. O. SQUARE.

EVERETT, MASS.

Corrugated, and all Other Shapes of Iron Roofing and Siding.



Iron Buildings, Roofs, Doors, Shutters, Cornices, Skylights, Bridges, &c.

Moseley Iron Bridge and Roof Co., Omce, 39 Cortlandt St., Room 128, NEW YORK.

STEEL FRAME MILL BUILDINGS,

Tanks for Water, Gas or Oil, Sheet and Plate Iron Work, Corrugated Iron, Water Filters, 10 to 10,000 gal. capacity

WM. B. SCAIFE & SONS, - Pittsburgh, Pa

A. S. MILLER, JR., Treasurer.

H

I

N

E

5 H 0

Eastern Bridge and Structural Co.,

Engineers, Contractors, and Manufacturers of

STEEL STRUCTURAL WORK OF EVERY DESCRIPTION.

Steel and fron frame work for buildings, roofs, railroad and highway bridges. Plans and estimates turnished. Write us. 58 Front St., Worcester, Mass. Works beside tracks of Fitchburg and B. & M. Railroads, Worcester, Mass.

For Operating Windows in Monitor Roofs.



s, Sky Lights and Transoms in Churches and Schools. s.

PHILADELPHIA MACHINE SCREW WORKS, 624-626 Race St., Philadelphia



AND NAIL WORKS. RAYNHAM, MASS.

MANUFACTURERS SEND FOR QUOTATIONS.

NATIONAL TUBE COMPANY

MANUFACTURERS OF

BLACK AND GALVANIZED

Wrought Merchant Pipe

ALL KINDS, SIZES 1-8 TO 30 INCHES.

BOILER TUBES.

Mild Steel and Charcoal Iron for Stationary, Locomotive and Marine Work.

CASING, TUBING AND DRIVE PIPE FOR WELL PURPOSES.

GAS AND OIL LINE PIPE.

Cylinders Lapwelded and Seamless, tested 100 lbs. to 3,700 lbs., for Compressed Air, Carbonic Acid Gas, Anhydrous Ammonia, Etc., Etc., Etc.

Water and Gas Mains.

CONVERSE AND MATHESON, LEAD JOINT, PIPE FOR MAINS.

SEAMLESS TUBES, SHRAPNEL, PROJECTILES AND MISCELLANEOUS FORGINGS.

OFFICE OF

OFFICE OF

PRESIDENT AND TREASURER,

MERCANTILE AND MANUFACTURING DEPT'S,

Havemeyer Bldg., New York.

Conestoga Bldg., Pittsburgh, Pa.

-LOCAL SALES OFFICES-

Havemeyer Building, New York.

95 Milk Street, Boston.

267 So. 4th Street, Philadelphia.

Conestoga Building, Pittsburgh.

Western Union Building, Chicago.

-FOREIGN OFFICE -

Dock House, Billiter Street, London, E. C., Eng.

TELEGRAPHIC ADDRESS.

TUBULIFORM, LONDON.

American Steel Hoop Company

General Offices Battery Park Building New York

MANUFACTURER

BAR IRON

Common Refined and "BB" Iron
Flats Rounds Squares Ovals Channels
Chain and Rivet Iron
Bolt and Nut Iron
"STAR" and "EAGLE" Horse Shoe Iron
Skelp Iron &c

BAR STEEL

Bessemer and Open Hearth
Flats Rounds Squares Ovals
Angles Channels Special Shapes
Round Edge Steel Tire
Agricultural Shapes &c

BANDS and HOOPS

Bessemer and Open Hearth
All widths and gauges
Steel Skelp Hame Back
Tongue Cap Cotton Ties &c

DISTRICT SALES OFFICES

Chicago St. Paul Pittsburg Endicott Building **Marquette Building Empire Building** St. Louis San Francisco Philadelphia **Fullerton Building** Land Title Building No. 23 Davis Street New Orleans Cleveland Boston Williamson Building No. 8 Oliver Street Hennen Building Montreal Cincinnati **Chamber of Commerce Building** Temple Building

> FOREIGN SALES OFFICE London, E. C., 78 Gracechurch Street

AMERICAN SHEET STEEL COMPANY

Battery Park Building New York

Manufacturers of all varieties of

Iron and Steel Sheets

BLACK AND GALVANIZED

W. Dewees Wood Company's Planished Iron
Wellsville Polished Steel Sheets

DISTRICT SALES AGENTS

STOCKTON & BRAINARD, Marquette Building, Chicago W. J. WETSTEIN & JOHN W. GOOD, Security Building, St. Louis S. J. WATERMAN, Neave Building, Cincinnati

Hoge & Swift, Portland, Oregon

T. H. SPEDDY, San Francisco

F. A. GOODRICH & COMPANY, Chamber of Commerce, Detroit

T. W. SIMPERS, Land Title Building, Philadelphia

F. C. MILLIKEN, Times Building, Pittsburgh

S. L. MITCHEL, Hennen Building, New Orleans

W. T. SHANNON, 34 West Ninth Street, Chattanooga

LEE CHAMBERLAIN, Los Angeles

L. A. HASTINGS, 1622 Arapahoe Street, Denver

B. & S. H. THOMPSON & COMPANY, Montreal, Canada.

American Tin Plate Company

MANUFACTURERS

Tin Plate



Terne Plate



. . and . .

Black Plate

GENERAL OFFICES:

Battery Park Building, NEW YORK CITY.

Tennessee Coal, Iron & Railroad Company.

General Offices, BIRMINGHAM, ALABAMA.

MAKERS_

Basic Open Hearth Steel.

Blooms, Billets and Slabs.

Foundry, Forge and Basic Pig Iron. Merchant Bar-Iron and Steel.

Steel Castings.

Spiegeleisen & Ferro Manganese.

MINERS AND SHIPPERS

Coal, Coke, Ore, Limestone and Dolomite.

Export Facilities through Ports of New Orleans, Mobile, Pensacola, Charleston, Port Royal. Brunswick, Savannah and Norfolk.

Sloss Sheffield Steel and Iron Company, Sloss Iron and Steel Company,

BIRMINGHAM, ALABAMA.

Manufacturing following well known brands of foundry iron:

"Sloss." "Florence." "Sheffleld," "Lady Ensley."

Selling Agents:

Hugh W. Adams & Company, 15 Beekman Street, New York City.
Hugh W. Adams & Company 85 Water Street, Boston, Mass.
D. L. Cobb. 305 Security Bdg., St. Louis, Mo.
J. K. Dimmiek & Company, 911 Drexel Bdg., Philadelphia, Pa.
Stevenson, Field & Company, 45 Board of Trade, Columbus, Ohio.
C. L. Baum. Salt Lake City, Utah.
J. R. Lehmer, 1212 Farnam Street, Omaha, Neb.
Martin Pipe & Foundry Company, San Francisco, Calif.
Hasam & Moreno, la Calle de las Damas 5, City of Mexico.

Cable address \$1.038. BLDMINGHAM. Market Labout A. J. Watter.

SHIPPERS OF FOUNDRY COKE FROM WASHED COAL, CELEBRATED

SLOSS PRATT STEAM AND

BLOCK DOMESTIC COAL.

Cable address SLOSS, BIRMINGHAM, using Lieber's A-1, Watkins, Western Union Telegraphic and the Atlantic Cable Directory Codes.

GALVANIZED STEEL SHEETS

Corrugated Sheets, Galvanized or Painted

BLACK STEEL AND IRON SHEETS ROOFING AND SIDING

McCULLOUGH IRON CO., - Wilmington, Delaware.

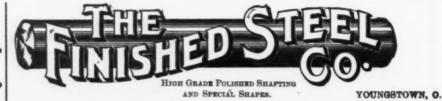
PIERSON & CO.,

IRON and STEEL OF EVERY DESCRIPTION.

29 Broadway, cor. Morris St. NEW YORK.

WILLIAM H. WALLACE & CO.

66 Broadway, - New York.



******************************* CONSOLIDATED IRON & STEEL CO.,

MANUFACTURERS OF

Refined Bars, Rods, Band and Hoop Iron. Reiling Mill at BRISTOL, PA.
Office-864 BULLITT BUILDING, PHILADELPHIA.

AMERICAN IRON AND STEEL MANUFACTURING CO.

LEBANON, PENNSYLVANIA.

Proprietors and Operators of the Plants formerly owned by Pennsylvania Bolt and Nut Co., J. H. Sternbergh & Son, National Bolt, Nut and Rivet Works, Lebanon Iron Co., and East Lebanon Iron Co.

MANUFACTURERS OF

MERCHANT BAR IRON

NEW YORK SALES OFFICE, 11 Broadway.

BALTIMORE SALES OFFICE, 806 Equitable Building.

ATLANTA SALES OFFICE, 1016 Prudential Building SAN FRANCISCO SALES OFFICE, 105 Front St.

ROBT L. HENRY, Pres.

D. B. SCULLY, Vice-Pres.

THEO, D. MORGAN, Gen. Mor.

WALTER E. STOV Sec. & Treas

CHAMPION IRON & STEEL CO.,

MUSKECON, MICH., Manufacturers of

TIN PLATE, TERNE PLATE,
BLACK PLATE and SHEETS.

Four Mills now running; four more Mills building. This Company has its own Open Hearth Steel Plant and Bar Mill. Also manufacturers of Merchant Bars, Steel and Iron.

YOUR INQUIRIES SOLICITED.



From "THE TRADESMAN."

"'The Knight of the Grip' is an interesting, suggestive and entertaining book, describing, in an intimate and well-informed fashion, the ways and manners, methods and make-up, of the traveling salesman, with just enough comment upon the shortcomings of the rare exceptions to emphasize the many admirable qualities and agreeable characteristics of the great majority of men in that calling. The price of the volume is 60 cents. Why it is so cheap, does not appear either in the matter or the make-up."

THE KNIGHT OF THE GRIP SIXTY CENTS, POSTPAID.

DAVID WILLIAMS COMPANY, 232-238 William St., N. Y.

THE CHERRY VALLEY IRON CO.,

MURTLAND BUILDING, PITTSBURG.

Famous "CHERRY VALLEY" brand

of Foundry Irons.

HIGH GRADE COAL AND COKE.

J. K. DIMMICK & CO., PIG IRON.

011 Drexel Building, PHILADELPHIA.

VIRGINIA IRON, COAL AND COKE CO.

Miners, Manufacturers and Shippers of

Pig Iron, Open Hearth Basic Steel,

Watts, Crozer, Foundry and Forge. Bristol. Graham. Radford, Max Meadows,
Buena Vista—Basic,
Embreville—Malleable,
Carnegie—Bessemer and
Low Phos.
Reed Island—Cold Blast

Charcoal.

PIG IRON BRANDS: A Horse Shoes, Merchant Bar Iron. Cast Iron Pipe, Coal and Coke.

GENERAL OFFICES:

BRISTOL, VA.-TENN.

TOMS CREEK

Steam and Domestic Coal. Foundry and Furnace Coke.

> RADFORD PIPE WORKS Cast Iron Pine.

CABLE ADDRESS: IRONVIRGIN-BRISTON.

TESTED CHAINS ONLY. BRADLEE & CO., EMPIRE CHAIN WORKS,

Beach St. and East Susquehanna Ave.,

SOLE MANUFACTURERS OF THE D. B. G. SPECIAL CRANE CHAIN.

CHAINS FOR FOUNDRY CRANES AND SLINGS. STEEL AND IRON DREDGING, SLOPE AND MINING CHAINS. SHIP'S CABLES, AND MARINE RAILWAY CHAINS.



PLANISHED STEEL BARS. ACCURATE STRAIGHT.

For Shafting Machine Rods, Keys, Guides, Screw Rods &c.
THE C. PARDEE WKS. PERTH AMBOY, N.J. PERTH AMBOY N.J.

Seamless Tubing

IN ALL METALS.

High and Low Carbon Steel. Brass, Copper, Aluminum, Silver, Platinum, etc. Hypodermic Needle Tubing.

SPECIALTY of Tubing of very small sizes (1-64 inch upwards) and very thin walls.

ELLWOOD IVINS.

487 Broadway, New York.

NEADQUARTERS for

ZINC ROOFING

SLATING NAILS

E. PHILLIPS & SONS. South Hanover,

MASS.

PHENIX TUBE CO.,

BRASS and BRONZE Iron Lined TUBES

for Bedsteads and Railings. Prices on application.

Alabama Consolidated Coal & Iron Co.,

BIRMINGHAM, ALA.

Manufacturers of the Celebrated Brands of Foundry Iron:

Also Miners and Shippers of . . HIGH-GRADE STEAM COAL

And Makers of the "STANDARD" FOUNDRY COKE. Selling Agents for the Matthew Addy & Co. Cincinnati, Chicago, St. Louis, Pitts-North and West: Matthew Addy & Co. Cincinnati, Chicago, St. Louis, Pitts-burgh, Philadelphia, New York.

MARINE CHAIN.

JAMES McKAY & CO., -- Pittsburgh, Pa. Canadian Representative:

HUGH RUSSEL, 185 St. James Street, Mentreal, Canada.

arers of Stud and Marine Chain of all kinds. All Chain made to the U. S. Admiralty Standard. Certificates of tests furnished with shipment. Write for prices.

United States Cast Iron Pipe and Foundry Co., Manufacturers of

Eastern Office, Land Title Bldg., Broad and Chestnut Sts., Philadelphia, Pa. Cable Address, McNealpipe, Phila.

CHARCOAL-IRON BOILER PLATES.

The same as we have been making for the last thirty years.

THE SEIDEL & HASTINGS CO

"ANALYSES OF PIG IRON,"

COLLECTED AND PUBLISHED BY

SEYMOUR R. CHURCH,

307 Sansome St., San Francisco. SEND FOR CIRCULAR.

Price, \$2.50 to U. S. and Canada, Postage Paid.

LUKENS IRON AND STEEL CO.

A. F. HUSTON, PRESIDE

CHAS. L. HUSTON, VICE-PRESIDENT

JOS. HUMPTON, SECRETARY AND TREASURER.

PLATES

SHEARED

UNIVERSAL MILL

No. 10 gauge to 2" thick. Widths 126" upward.

Widths 10' to 48" (3 high rolled.) 34" thick and over.

.... THE FIRST TO MAKE BOILER PLATES IN AMERICA.

MAIN OFFICE and WORKS. Coatesville, Pa.

PHILADELPHIA OFFICE Fidelity Building, Rooms 405-6-7-8, N. Broad St. above Arch St.

NEW YORK OFFICE: 29 Broadway.

BOSTON OFFICE 8 Oliver Street.

NEW ORLEANS OFFICE and WAREHOUSE: 626-630 South Peters St.

BALTIMORE OFFICE: 102 South Street.

CINCINNATI . CHARLES NEBLETT. CHICAGO :- A. M. CASTLE & CO., 54-60 Canal Street.

CLEVELAND: J. F. CORLETT, Perry Payne Bldg.

FRANK SAMUEL, Harrison Building, 15th & Market Sts.,

OW PHOSPHOR

PIC IRON—.03 or under.
SCRAP—.03 or .05 or under.
ORE—For O. H. and Furnace Use.
MELTING BAR—

Open Hearth and Bessemer Billets Skelp Muck Bars and Scrap, Fo dry and Ressemer Pig Iron Syracuse Tube Co.'s Tubes and Pipe.

410 WALNUT ST., PHILADELPHIA,

Steel Structural Shapes of Open PHENIX IRON CO., MANUFACTURERS Hearth Steel by Acid and Basic Processes. Subject to Specifications

Beams, Channels, Deck Beams, Angles, Tee Bars, Zee Bars, Bulb Angles; Buckle Plates and other shapes, Round, Flat and Square BARS of all sizes.

SPECIALTIES:-Phoenix Columns and Upset Eye Bars; Fire Proof Buildings; Roof Trusses, Girders, Joists and Riveted Work of every description.

NEW YORK OFFICE, 49 William Street; WESTERN OFFICE, A. C. Stites, The Rookery, Chicago.

& CO.,

112 N. Broad Street. PHILADELPHIA,

AGENTS FOR

PITTSBURGH.

GHAS. E. MCINNES SEAMLESS COLD DRAWN

ATLANTIC TUBE CO., FOR BOILER, AUTOMOBILE, CARRIAGE, BICYCLE, MOTOR AND PUMP CONSTRUCTION.

Iron and Steel Bars, Angles, Corrugated Sheets, and RIVETS.

JATIONA

BATTERY PARK BUILDING, NEW YORK

Manufacturers of

BESSEMER AND OPEN HEARTH BILLETS

Lendon Office: 77-78 Gracechurch St., London, E. C.

SHEET AND TIN PLATE BARS

Passaic Rolling Mill Co., Paterson, N. J ROLLED STEEL BEAMS.

Channels, Angles, Tees, &c.

Riveted Work, Forgings, Eye Bars, &c HIGH GRADE MERCHANT BAR IRON.

MEW YORK OFFICE, - - ROOMS 151 AND 159, No. 45 BROADWAY.

Red River Iron Co.'s SUPERIOR CHARCOAL IRON CO., HIGH SILICON PIG.

GRAND RAPIDS, MICH.

HICKMAN, WILLIAMS & CO.,

CHICAGO,
The Rookery.

PROMPT DELIVERY.

LION BRAND" ALLOYS SEO. G. BLACKWELL, SONS & CO., IMPORTERS, MANUFACTURERS, MERCH THE ALBANY, LIVERPOOL, E Write or Cable for Prices and Particula Sodes.—A B C 4th Edition Moreing & Neal 8, FOR STEEL.

Ferro-Chromium, Cr. 70%, C. 1%. Ferro-Tungsten, any %. Molybdenum-Nickel. S. A. M. Premier Deoxidiser. Molybdenum Metal (Fused and

Ferro-Nickel, Ferro-Boron Ferro-Titanium, Chrome-Nickel.

> LEADING LINE IN ORES MOLYBDENITE, WOLFRAM, SHEEL27 E. CHROME, MANGANESE,

HOBSON, HOUGHTON & CO.,

Successors to FRANCIS HOBSON & SON, DON STEEL WORKS, SHEFFIELD.

Sole Manufacturers of

Hobson's "Choice" Extra Best Tool Steels, "Warranted Best" Cast Steels for Tools, etc.

HOBSON'S "CHOICE" Extra Quality Needle Wire.

"SOHO" Special Self Hardening Steel.

Bright Drill Rods, Highest Quality and Accuracy.

WAREHOUSE, 98 John St., New York.

CHAS. HUGILL, Agent.

S. & C. WARDLOW, SHEFFIELD, ENGLAND.

Manufacturers of the Celebrated Cast and Double Shear Steel,

in Bars, Sheets and Coils, for fine Pen and Pocket Cutlery, Razors, Carvers, Butchers' Knives, Files, Band Saws, Clock, Watch and all other Springs; also Sole Makers of the Special Brand ff TOUCH? Cast Steel for Leather Splitting and Machine Knives of every description and for Turning and

Office and Warehouse, 95 John St., New York.

Frank S. Pilditch, Agent.

S

JONAS & COLVER CONTINENTAL STEEL WORKS, Sheffield, England.

MANUFACTURERS OF ALL KINDS OF STEEL.

Tool Steel, Drill Rods, Needle Wire, Hot Rolled Sheet Steel, Cold Rolled Steel for Corset Springs, Band Saws, Clock and Watch Springs and Parts, and all other purposes.

HERMANN BOKER & CO., 101 & 103 Duane Street,

Formerly CARL F. BOKER.

Sole Agents and Importers of Steel and Crucible Wire Rods, &c.

JESSOP'S STEEL

Established 1774.

MANUFACTURED BY

WM. JESSOP & SONS, L'D.

of BEST QUALITY, in BARS, SHEETS and PLATES.

Large assortment of sizes in stock at

91 JOHN ST.,

- - - NEW YORK.

SHEFFIELD,

GRAND PRIX,

Paris, 1900.

CHAMPION TOOL STEEL

Extra, Special and Double Special Highest Quality Drill Steel,

THE BENJ. ATHA & ILLINGWORTH COMPANY.

ATHA AIR HARDENING TOOL STEEL. C. S. & O. H. DIE BLOCKS. NICKEL STEEL.

FORGINGS AND CASTINGS.
All kinds of lower grade Steels.

DENMAN & DAVIS, Acts.
Office and Warehouse, 85 and 87 JOHN STREET, N. Y.

WHEELOCK, LOVEJOY & CO.,

23 Cliff St., NEW YORK. 35 Oliver St., BOSTON.

FIRTHS STEEL.

AGENCIES:

FIRTH-STERLING STEEL CO., Tool Steel. THOS. FIRTH & SONS, Ltd..

THOS. FIRTH & SONS, Ltd., Tool and Sheet Steel GLOBE WIRE CO., Ltd., Drill Rods

SWEDISH IRON AND STEEL.

BOLE, ROSS & CO.

802 and 624 Park Building, Pittsburgh, Pa.

IRON AND STEEL

AMERICAN

PIG IRON STORAGE WARRANT CO., ... (Bank of America Building.) 44 Well St., N. Y. Correspondence of Furnaces Invited,

STAYBOLT, BOILER BRACE, RIVET, TOOL AND AXLE IRON.

VULCAN HIGH GRADE

IRON

RADE PITTSBURGH.PA

SQUARE ROOT AND FILLET ANGLES, HEXAGONS AND SMALL CHANNELS. LOCKHART

STEEL

W. P. SNYDER & CO.,

Bessemer and Open-Hearth Steel.
Bessemer pig, BILLETS, and SHEET BARS.

Offices, German National Bank Building,

PITTSBURGH, PA.

WILLSON ALUMINUM CO.,

Manufacturers of FERRO-CHROMIUM,

Office, 99 CEDAR STREET, NEW YORK.

WORKS: Holsomb Rock, Va.; Kanawha Palls, W. Va.

Business ALAN WOOD COMPANY,

Manufacturers of Sheets and Light Plates of Iron and Steel, BLACK AND GALVANIZED.

General Office and Warehouse, 519 Arch Street, Phila.

Schuykill Iren Works, Conshehecken, Penna

SPECIALTIES.—Patent Planished Locomotive Jacket, Corrugated, Bath Boiler, Gas Helder, Swede and Norway Sheets, Blue Annealed, Best Bloom, M. F., A. W. Clean, Cold Relied Sheets, Pickeled and Cold Rolled Sheets, Best Last, Water Pipe and Light Plates, Electrical Iroz and Steel.

The only manufacturers of Sheets having a warehouse in Philadelphia, where we invite the trade and scottemers to inspect our large and well-assorted stock.

A. MILNE & CO., SWEDISH (NORWAY) IRON AND STEEL,

Blooms, Billets, Bars; Wire, Rivet and Nail Rods. FOREIGN and DOMESTIC IRON and STEEL

Broadway, New York.

8 Oliver Street, Boston.

HORACE T. POTTS & CO.,

NORWAY (SWEDISH) IRON.

ALL REGULAR SIZES IN STOCK Special sizes ROLLED or HAMMERED to order

AMERICAN IRON AND STEEL OF ALL DESCRIPTIONS IN STOCK 316, 318, 320 North Third Street, - Philadelphia, Pa.

L. & R. WISTER & CO., 672 BULLITT BUILDING, PHILADELPHIA PA SALES AGENTS FOR-

AMERICAN SHEET IRON CO.

Manufacturers of BLACK SHEET IRON in gauge from 17 to 28. WORKS AT PHILLIPSBURG, N.J. CORRESPONDENCE SOLICITED

BARIRON and STEEL,
BLUE ANNEALED
and GALVANIZED SHEETS
IN B. NEWKIRK
STE
STE
CO
IZED SHEETS
IZED SHE STRUCTURAL SHAPES, STEEL CASTINGS. STEEL PLATES, STEEL PAILS. IRON and STEEL IRON FORG-RAILWAY AND MINE SUPPLIES A SPECIALTY. INGS

CORRESPONDENCE SOLICITED.

OFFICES

HARRISON BUILDING, 15th and Market Sts., PHILADELPHIA, PA., U. S. A.

BIRMINGHAM IRON FOUNDRY, BERRY, U.S.A.

GEO. NASH & CO.. SPECIALTIES IN HIGH GRADE STEEL.

FOR BLANKING AND DEEP DRAWING.

USED IN BICYCLE PARTS, SEWING MACHINE ATTACHMENTS, ETC.

DRILL RODS. MUSIC WIRE, SPRING WIRE. COLD ROLLED STEEL TO TEMPER FOR SAWS, SPRINGS, ETC.

HARDENED AND TEMPERED STEEL STRIPS AND WIRE, ETC., ETC.

DANNEMORA" TOOL AND SELF-HARDENING STEELS

Manufactured by SEEBOHM & DIECESTAHL, Sheffield, Eng

NEW YORK, 15 PLATT STREET.

CHICAGO 24 SO. CLINTON ST.

R. MUSHET'S

SPECIAL,"

"TITANIC,"

STEEL For Chisels, Taps, Dies, Chilled Roll Turning, Punches, &c., &c. LATHE AND PLANER TOOLS. (The "Trade-Marks" of which are registered in the United States.)

MANUFACTURED ONLY BY

SAMUEL OSBORN & CO., - - Clyde Steel and Iron Works, Sheffield, Eng. SOLE REPRESENTATIVES IN THE UNITED STATES,

B. M. JONES & CO., - - No. 81 Milk St., Boston. NO. 143 LIBERTY STREET, NEW YORK.

ESTABLISHED 1869

JEROME KEELEY & CO.,

The Philadelphia Bank Bldg., 421 Chestnut St., PHILADELPHIA.

Foundry Forge Pig Irons, Iron Ores, Coke, Coal.

Steel Blooms, Billets, Rails, etc. Muck Bars, Blooms, Scrap Iron. Consulting Engineers in Metallurgy and Mining.

J. Wesley Pullman PHILADELPHIA.

BEST AMERICAN AND FOREIGN IRON ORES.

FRANCIS WISTER. COMMISSION MERCHANT.

Coke, Coal, Ores.

Agent for BLAIN RUN COAL CO. and South Angeline Ore. Blain Run Coal is especially adapted for Rolling Mill Use:

1437 Chestnut St. Entrance 41 So. 15th St., Phila. C. B. Houston, J. Max Bernard, H. H. Houston.

C. B. HOUSTON & CO., Girard Building, PHILADELPHIA.

Pig Iron, Coal, Coke, Steel Rails, Structural Iron, Steel Castings and Fire Brick. Sole Agents for Paxton Rolling Mills. STEEL AND IRON PLATES.

J. J. MOHR.

Bullitt Building, No. 131 South Fourth St., PHILADELPHIA, PA.

Foundry, Forge, Charcoal and Bessemer Pig Iron.

Dealer in Scrap, Old Car Wheels, Muck Bars and Connellsville Coke.

ERNEST LAW & CO., (Successors to J. W. HOFFMAN & CO.) Harrison Bldg., 15th and Market Sts., PHILADA. Iron and Steel, Coal and Coke,

PIG IRON AND ORES.

Iron and Steel Plates, Sheets, Bars and Shapes,
Cars and Locomotives.

Track Equipment.

CORRESPONDENCE SOLICITED.

Justice Cox, Jr., & Co., Ltd., 552 & 554 Bullitt Building, Phila., Pa.

IRON and STEEL.

Canonsburg Iron & Steel Co Superior Light Steel Sheets. Lebanon Rolling Mills Co's

Brier Hill Iron & Coal Co.'s Bessemer and Low Phos. Pig Iron,

Pulaaki Iron Co.'s Bessemer and Low Phos. Fig Iron.
High Grade Foundry and Forge Pig Iron.
Lebanon Valley Furnace Co.'s
Cornwall Bessemer Pig Iron.
National Structural Tubing Co.'s

National Structural Tubing Co.'s

Tubing and Shapes.

Bars, Angles, Sheets, Tank and Bridge
Plate, Muck Bars, Scrap Iron and
Steel, New and Old Rails,
Foreign and Domestic Ores.

W.H.THOMSON & CO.

1RON AND STEEL, COAL AND COKE, STEAMSHIP OUTFITS, RAILWAY EQUIPMENT. Room 511-512 Land Title Bldg., Broad and Chestnut Sts.,

PHILADELPHIA, PA.

Eastern Agents, Youngstown Iron and Steel Roofing
Co., Youngstown, O.

J. TATNALL LEA & CO.,

STEPHEN GIRARD BUILDING,

NO. 19 SO. 12TH ST., PHILADELPHIA.

Bessemer, Mill and Foun-

dry Pig Iron, Steel Billets, Muck Bars and Iron Ores.

ESTABLISHED 1848.

SINGER, NIMICK & CO.,

PITTSBURGH, PA

(INCORPORATED.)
ANDFACTURERS OF ALL KINDS O

Hammered and Rolled

Cold Rolled Strip Stee Cold Drawn Bar Steel

Crucible Tool, Saw, File and Sheet Cast Steel. Crucible and Open Hearth Agricultural Steel. Rolling Plow Colters. Harrow Discs. Also Carriage and Wagon Springs and Axles.

SINGER, NIMICK & CO., Incpd., 55, 57 and 59 North Jefferson St., Chicago, Ill. Represented at 243 Pearl and 18 Cliff Streets, New York, by

HOGAN & SON, General Agents for Eastern and New England States.

GEORGE N. HOGAN, 417 Commerce St., Philadelphia: FITZ, DANA & Co., 110 North St., Boston.

 $\mathbf{E}\mathbf{E}\mathbf{I}$ BEL E

Ridge Avenue and Belmont Street, Allegheny City, Pa. Post Office Address, Pittsburgh, Pa.

SPRINGS. AXLES. RAKE TEETH. Etc. MANUFACTURERS OF ALL KINDS

WETHERELL BROS. Eastern Representatives. 31 Oliver St., Boston, Mass., and 120 Liberty St., New York City. Chicago Agent, BYRON H. WHITE, 68-70 South Canal St., Chicago. Canadian Agent, W. C. BLYTH, No. 76 York St., Toronto Ont.

LORAIN STEEL CO Rails & Billets. LORAIN.

THOMAS W. FITCH, Pres.

THOMAS W. FITCH, Jr., Sec'y and Treas.

PITTSBURGH STEEL SHAFTING COMPANY.

- PITTSBURGH, PA. Offices: 1212-1214 Park Building, -

Turned, Rolled and Polished

TEE

AND SQUARE AND HEXAGON BARS.

Eastern Office, POSTAL TELEGRAPH BUILDING, 258 Broadway, NEW YORK.

N. LILIENBERG, 150 BROADWAY, N. Y.

SWEDISH IRON&STEEL

All grades from the famous DANNEMORE WORKS OSTERBY, IGGESUND, SÖDERFORS and others,

REED F. BLAIR & CO.,

Lewis Building, Pittsburg, Pa.

STEEL BUILDINGS

Of Every Description

IRON CASTINGS.

Heavy Work A Specialty.

TURING WORKS ESTABLISHED IN 1883.

SMALL SEAMLESS BRASS

1-32 to 3/4 inch in diameter-any Gauge. Also German Silver Tubing.

SEND FOR QUOTATIONS.

WM. S. SPOFFORD & SON.

Providence, R. I., U. S. A.





PLANTS FOR THE ECONOMICAL PRODUCTION OF AND COPPER SHEETS, BRASS RODS, WIRE and TUBING Preliminary Expert Work and Complete Plants. HUGH L. THOMPSON, Engineer, WATERBURY,

CANTON

ESTABLISHED

STEEL

AND OTHER GRADES OF

FINE CAST STEEL.

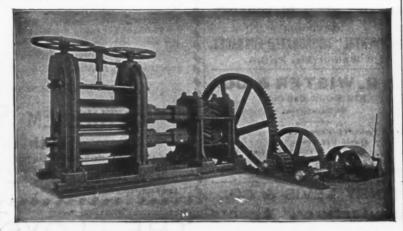
CANTON, OHIO

FARREL FOUNDRY & MACHINE CO.,

ANSONIA, CONN.

of IRON, or SEMI-STEEL in Dry Sand, Green Sand or Loam.

Please specify your inquiry and mention THE IRON AGE.



CHILLED and SAND ROLLS. ROLLING MILL MACHINERY for Brass, Copper, Lead, Silver, Britannia and other metals TRANSMISSION MACHINERY, RUBBER MACHINERY, MINING MACHINERY, Stone Breakers, Crushing Rolls, etc. STONE WORKING MACHINERY, Planers, Headers, Diamond Saws, etc., MACHINE MOULDED GEARING. GENERAL MACHINERY, Felt Hardeners, Veneer Cutters, Shears, Hydraulic Presses and Pumps, Railrond Cranes, etc., etc.

"OTIS" FIRE-BOX PLATES A SPECIALTY. FLANGE PLATES, SHIP PLATES, TANK PLATES. STEEL AXLES of all kinds.

STEEL CASTINGS AND FORGINGS.

Head Office and Works. CLEVELAND, OHIO.

Agencies: NEW YORK, 97 Cedar Street. ST. LOUIS, 615 N. Fourth St. WASHINGTON, Kellogg Building.

MONTREAL, Homer Taylor, 183 St. James St. SAN FRANCISCO, John Woodlock, 154-156 First Street.

FROM I to 40,000 POUNDS WEIGHT. Of Open Hearth or McHaffle Steel.

True to Pattern. Sound. Solid.
Gearing of all kinds, Crank Shafts, Knuckles for Car Couplers,
Cross-Heads, Rockers. Pistons-Heads. etc., for Locomotives.

Steel Castings of Every Description.

CHESTER STEEL CASTINGS CO., Works, Chester, Pa. Office, 407 Library St., Philadelphia, Pa.

BRAEBURN STEEL COMPANY, BRAEBURN, PA.

Manufacturers of

Fine Tool Steel and Forgings. Also Spring, Hammer, and Machinery Steel of high quality. Fine Open Hearth Steel.

DIRECTORS : William Metcalf, Charles Metcalf P. B. Hasbrouck. R. P. Kelly, Sec'y and Treas



showing these castings actory and economical frength and durability

e proved the most satisfactor all purposes requiring streng CHROME STEEL CHROME STEEL WORKS, Kent Ave., Keap and Hooper Sts., Brooklyn. N. Y.

TITE TIMA

COMPANY, LIMA, O., U. S. A.

Open Hearth Steel Castings of Every Description.

Steel

From 1 oz. to 60,000 lbs.

TRUE TO PATTERN.

E. M. SHAW,

935A Banigan Building,

PROVIDENCE, R. I.

SOLID STEEL CASTINGS.

NEW ENGLAND STEEL CASTINGS CO., 403 PROVIDENT BUILDING PHILADELPHIA, PA.

CABEEN

& CO., Real Estate Trust Building,

Steel Billets and Slabs, both Bessemer and Open Hearth,

Pig Iron, Manufactured Steel, &c.

E.R. ALLEN

MANUFACTURER OF

All kinds of soft, fine, medium and heavy Grey Iron Castings to order. Boiler, Heater, and Architectural Iron Castings a specialty.

Send for Prices and Estimates.

Corning, New York.

65-81 Lloyd Street NEW HAVEN, -

BARCLAY W. COTTON & CO... Successors to ESHRRICK COTTON & CO.,

Iron and Steel Merchants.

AGENTS FOR

" CONTINENTAL" CORRUGATED FURNACES. 418 Walnut St., PHILA.

.. & R. WISTER & CO

672 Bullitt Building,

Philadelphia.

Sunbar Foundry Forge and Basic Pig Iron.

Wyebrooke Cold Blass

Dealers in all kinds of Scrap Iron and Steel.

HENRY LEVIS & CO., Manufacturers' Agents

For Iron and Steel Rails, Car Wheels, Boiler and Sheet Iron and General Railway Equipments.

Old Rails, Axles and Wheels bought and sold.

26 S. 15th St., Philadelphia.

E. H. WILSON & CO.,

FIDELITY BUILDING, 112 North Bread St., Philadelphia BROKERS AND DEALERS IN

IRON AND STEEL

Correspondence Solicited.

MIFFLIN WHEELER & CO.,

Nicolls, Wheeler & Co., Fidelity Building, Philadelphia, Pa. DEALERS IN

IRON and STEEL SCRAP.

Pig Iron, Muck Bars, Charcoal Blooms, &c., &c. Steel and Iron Plates, New and Old Ralls.

EDWARD J. ETTING,

Land Title Building, Philadelphia, Pa.

IRON, STEEL, PIG IRON.

Maryland Car Wheel Works, Car Wheels.
"Turner" Water Tube Safety Bellers.
"Meunt Savage" Fire Brick.
"Pridmere" Melding Machines for Iron and
Brass Foundries.

"Whiting" Cranes, Cupelas, Air Heists and ether Feundry Equipment. "Standard" Pneumatic Teels.

577, 579, 581 and 588 GREENWICH ST.,

NEW YORK.

IRON and STEEL

BARS, ANGLES, TEES, BEAMS, CHANNELS, PLATES, SHEETS, BANDS, HOOPS. ETC.

THE FINISHED STEEL CO., Cold Finished

BRAEBURN STEEL CO., Tool Steel, etc.

PIG IRON.

Philadelphia.

mmmmm "BETHLEHEM" FORGINGS

Have scored another triumph in the remarkable results attained during the recent speed tests of U. S. Battleship "Wisconsin" and Russian Cruiser "Variag."

The shafts and engine-forgings of both ships are representative products of our Works, and demonstrate anew the possibilities of

FLUID-COMPRESSED NICKEL AND CARBON STEELS,

when thoroughly forged under hydraulic pressure and carefully annealed.

SEND TO OUR NEAREST OFFICE FOR PAMPHLET.

BETHLEHEM STEEL COMPANY,

South Bethlehem, Pa.

BRANCH OFFICES:—100 Broadway, New York; 421 Chestnut St., Philadelphia; 1433 Marquette Building, Chicago; 312 Perry-Payne Building, Cleveland; 340-342 Main St., Cincinnati; 430 Endicott Building, St. Paul; 726 Gravier St., New Orleans; 4 Bank Block, Denver; Fremont and Howard Sts.,

YOUNGSTOWN, O.



HYDRAULIC MACHINERY-AUTOMATIC MILL TABLES. TIN PLATE, IRON AND STEEL WORKS MACHINERY.

THE LORAIN FOUNDRY COMPANY. LORAIN, OHIO.

SAND AND CHILLED ROLLS.

HEAVY IRON CASTINGS IN LOAM, DRY and GREEN SAND.

BRASS and COPPER CASTINGS.

MADE FROM CUPOLA OR AIR FURNACE.



GEO. MESTA, Pres't.

W. H. REA, Treas.

J. O. HORNING, Sec'y.

Mesta Machine Company, Pittsburgh, Pa.,

SUCCESSORS TO

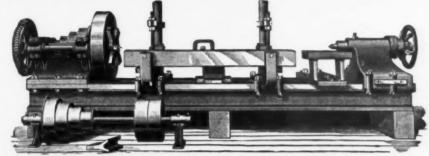
THE ROBINSON-REA MFG. CO., and LEECHBURG FOUNDRY AND MACHINE CO.

MANUFACTURERS OF

Rolling Mill, Steel Works and Tin Plate Machinery, Machine-Molded Cears, Ingot Molds, Chilled and Sand Rolls.



MEW IMPROVED STANDARD BOLL LATHE



Made b, TOTTEN & HOGG I & S FOUNDRY CO., Pittsburg, Pa., Manufacturers of CHILL ROLLS AND ROLLING MILL MACHINERY.

THE PHILADELPHIA ROLL AND MACHINE CO.,

Makers of HEAVY AIR FURNACE CASTINGS, including

SUN CARRIAGES. ROLLING MILL MACHINERY.



We make a specialty of Plate Straightening Machines and are prepared to furnish

TIN PLATE MILLS.

23d St. and Washington Ave.,

PHILADELPHIA, PA.

GAS

AND

PRODUCERS

FURNACES. II

JOHN H. RICKETSON, Prest. A. G. BARNETT, Treas.

. W. L. RICKETSON, Supt.

O. G. RICKETSON, Vice-Prest A. G. BARNETT, JR., Sec'y

GARRISON FOUNDRY

Manufacturers of Sand, Patent Homogeneous Steel and

CHILLED ROLLS.

ore and Clay Pulverizers, Rotary Squeezers, Haskin's Patent Double Spiral Pinions and Rolling Mill Castings

Office: South Ninth and Bingham Streets, PITTSBURGH, PA.



Frank-Kneeland Machine Co.,

54th St., PITTSBURG, PA.

CHILLED, SAND AND STEEL

Rolling Mill Machinery.

DIAMOND DRILL AND MACHINE COMPANY.

BIRDSBORO, PA.

Rolling Mill, Hydraulic

and General Machinery

LIGHT AND HEAVY IRON CASTINGS.

Royal" Rock and Ore Crusher, Diamond Drill, Belt-Lacing Machines.

FINE, CLEAN AND SOFT. SATISFACTION GUARANTEED WM. M. CRANE CO. 1131 and 1133 Broadway, N. Y. City. Foundry, Peekskil Foundry, Peekskill, N. Y.

PYROMETERS,

for

BLAST

ANNEALING FURNACES.

Guaranteed reliable, whether used constantly or intermittently.

JEHLING, STEINBART & CO., Ltd.,

Carlstadt, N. J.

MALLEABLE CASTINGS.

Made from Refined Charcoal Iron.
DUCTILE STEEL,
Will not Harden in Brazing or Welding.

ACME STEEL,
Will Temper Like Tool Steel.
Suitable for Edge Tools, Scissors,
Razors, etc.

ACME STEEL AND MALLEABLE IRON WORKS Buffalo, N. Y.

Our 702 PLUMBAGO

BARREL

FREL
FOR THE ASKING.
Give same most
severe test possible. If not as
represented and
does not do your
work to the pink
of perfection, return at our expense. Write for
Cat. "C."

THE

S. OBERTAYER CO., Cincinnati, O., Chicago, Ill, Cable address, "ESSO," Cincinnati, O. A B C Code.

STEEL **IRON**

FORGINGS AND SHEAR BLADES. TIN MILL MACHINERY.

F. R. PHILLIPS & SONS CO., PHILA.

THE ARTHUR C. HARVEY CO., BOSTON, MASS.

Importers and Dealers.

Norway and Swedish IRON.

Full assortment of Iron and Steel in Boston Warehouse.

JUST PUBLISHED

AN AMERICAN BOOK ON

Horseless Vehicles, Automobiles and Motor Cycles

OPERATED BY Steam, Hydro-Carbon, Electric and Pneumatic Motors.

By GARDNER D. HISCOX, M. E.

Author of "Gas, Gasoline and Oil Engines" and
"Mechanical Movements, Powers, Devices
and Appliances,"
Large 8vo. 69 pages. 316 illustrations. Handsomely
Bound in Cloth. Price \$3.00.

A Practical Treatise for Automobilists, Manufacturers, Capitalists, Investors, Pro-moters, and everyone interested in the de-velopment, care and use of the Automobile.

THE ONLY AMERICAN BOOK ON THE SUBJECT.

This work is written on a broad basis, and comprises in its scope a full description with illustrations, and details, of the progress and manufacturing advance of one of the most important innovations of the times, contributing to the pleasure and business convenience of mankind.

The makeup and management of Automobile Vehicles of all kinds are very liberally treated, and in a way that will be appreciated by those who are reaching out for a better knowledge of this new era in locomotion.

This book is up-to-date and very fully illustrated with various types of Horseless Carriages, Automobiles, and Motor Cycles, with many details of the same.

ame.
It also contains a complete list of the Automobile
and Motor Manufacturers with their addresses, as
rell as a list of patents issued since 1856 on the Autonobile industry.

CONTENTS.

mobile industry.

CONTENTS,
Chapter I.—Introductory. Chapter II.—Historical.
Chapter III.—Steam Automobile Motor Appliances,
Chapter IV.—Specialties in Automobile Construction.
Chapter IV.—Specialties in Automobile Construction.
Chapter V.—Steam Propelled Vehicles and Automobile Carriages. Chapter VII.—Horseless Vehicles, with
Explosive Motors. Chapter VII.—Electric Ignition
Devices. Chapter III.—Atomizing Carbureters.
Chapter IX.—Operating Devices and Speed Gears.
Chapter IX.—Operating Devices and Speed Gears.
Chapter XI.—Automobile Bicycles and Tricycles. Chapter
XII.—Electric Motive Power for Vehicles. Chapter
XII.—Electric Motive Power for Vehicles. Chapter
XII.—Electric Motive Power for Vehicles. Chapter
XII.—How to Build an Electric Cab, with Detail
Drawings. Chapter XV.—The General Management
of Motor Vehicles of all Kinds.—Chapter XVI.—Compressed Air Power for Vehicles. Chapter XVII.—Miscellaneous. Vehicles, Motors, Appliances, etc., etc.
Chapter XVIII.—List of the United States Patents on
Automobiles and Running Gear. Chapter XIX.—List
of Manufacturers of Automobiles in the United
States, with their Addresses. Index.

Other Works by GARDNER D. HISCOX, M.E.

Gas, Gasoline and Oil Engines.

Third Edition, Revised and much Enlarged. Large Octavo, Illustrated with 270 Hand Engravings. Price \$2.50.

Full of general information about the new and lar Motive Power, its economy and ease of n

CONTENTS

Chapter I.—Introductory, Historical. Chapter II.—
Theory of the Gas and Gasoline Engine. Chapter III.—
Theory of the Gas and Gasoline Engine. Chapter III.—
Utilization of Heat and efficiency in Gas Engines.
Chapter IV.—Heat Efficiencies. Chapter V.—Retarded
Combustion and Wail-Cooling. Chapter V.—Causes
of Loas and Inefficiency in Explosive Motor. Chapter VII.—Economy of the Gas Engine for Electric
Lighting. Chapter VIII.—The Material of Power in
Explosive Engines, Gas, Petroleum Products and
Acetylene Gas. Chapter IX.—Carbureters and Vapor
Gas for Explosive Motors. Chapter X.—Cylinder
Capacity of Gas and Gasoline Engines, Mufflers on Gas
Engines, Chapter XI.—Governors and Valve Gear.
Chapter XII.—Igniters and Exploders, Hot Tube and
Electric. Chapter XIII.—Cylinder Lubrication. Chapter XIV.—On the Tlanagement of Explosive Motors.
Chapter XV.—The Measurement of Power by Prony
Brakes, Dynamometers and Indicators, The Measurement of Speed, The Indicator and its Work, Vibrations
of Buildings and Floors by the Running of Explosive
Motors. Chapter XVI.—Explosive Engine Testing.
Chapter XVII.—Various Types of Gas and Oil Engines,
Marine and Vehicle Motors. Chapter XVIII.—Various
Types of Gas and Oil Engines, Marine and Vehicle
Motors—Continued. Chapter XIX.—United States
Patents on Gas, Gasoline and Oil Engines and their
Adjuncts—1875 to 1897 inclusive.

Mechanical Movements,

Powers, Devices and Appliances,
Large 8vo. 462 pages, 1659 Illustrations, with
Descriptive Text. Price \$3.00.

A Dictionary of Mechanical Movements, Powers,
Devices and Appliances, embracing an illustrated
description of the greatest variety of mechanical
movements and devices in any language. A new
work on illustrated mechanics, mechanical movements, devices and appliances, covering nearly the
whole range of the practical and inventive field, for
the use of Machinists. Mechanics. Inventors, Engineers, Draughtsmen, Students and all others interested in any way in the devising and operation of
mechanical works of any kind.

CONTENTS.

ONTENTS,

1. Mechanical Powers. 2. Transmission of Power.

5. Measurement of Power, 4. Steam Power-Boilers and Adjuncts. 5. Steam Appliances. 6. Motive Power -Gas and Gasoline Engines. 7. Hydraulic Power and Devices. 8. Air Power Appliances. 9. Electric Power and Construction. 10. Navigation and Roads. 11. Gearing. 12. Motion and Devices Contro.ling Motion. 15. Horological. 14. Mining. 15. Mill and Factory Appliances. 16. Construction and Devices. 17. Draughting Devices. 18. Missellaneous Devices.

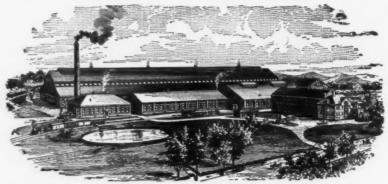
Copies of any of the above works, prepaid on pt of price.

DAVID WILLIAMS CO.,

232 William Street,

New Yc-k.

ESSIONS FOUNDRY CO.,



Main foundry room 530 x 110 ft.

IRON CASTINGS.

High Grade Castings, small and Large. To Order.

ESTABLISHED 1850.

ARCADE MALLEABLE IRON CO.

Malleable Iron

and Steel Castings.

Correspondence solicited. Prices given upon receipt of patterns or samples.

WORCESTER, MASS.

WARREN, McFARLAND & CO.

GEO. B. BUCKINGHAM

MANAGEMENT OF THE PROPERTY OF



FOR CASE-HARDENING,

CARBURIZER is the most efficient material.

It penetrates deeper, requires less time and is heaper on account of its specific weight than any

cheaper on account of its specific weight them any other material now in use.

CARBURIZER does not corrode the article and from or steel does not become brittle if properly treated the **CARBURIZER** does not lost it it be found necessary to reheat the hardened piece.

CARBURIZER contains no obnoxious substances and is ready for immediate use.

For full particulars address

AMERICAN CARBURIZING CO.,

160 Pearl Street, NEW YORK,

Factory, Warren and Bay Streets, Jersey City, N. J.

· AUTONOMORANDO ANTONOMORANDO ANTONOMORANDO

MALLEABLE IRON

SEMI-STEEL AND **GUN METAL**

Castings and Fittings of Every Description

YORK MANUFACTURING CO.

AUTOMOBIL

TO ORDER. MADE OF

STEEL, MALLEABLE, BRONZE OR ALUMINUM

Send samples for prices, stating quantity required.

HOMER F. LIVERMORE.

85 PEARL ST., BOSTON.

NORWALK PATTERN & MFG. CO.,

SO. NORWALK, CONN.



LIGHT

()n account of our immense facilities we can put patterns in sand on receipt of order. Send trial order. Prices are right.

STANDARD FDY. & MFG. CO., Cleveland, O.

THE FERRO-CARBON CASTINGS CO.,

FRANKFORD, PHILADELPHIA, PA.

Pres't & Gen'l Mana GEAR WHEELS,		C. REX, Some Repre		Tests of A		C. A. G. RI	AXES.
CAR WHEELS, CYLINDERS,	DATE, 1899	Size in Inches.	Area in Sq. Inches	Ultimate Strain in Lbs.	Ultimate Strain per Sq. In.	Per Cent. of Elongation	HATCHETS,
VALVES and	May 5th,	972 1,000	.742 .7854	49.820 49.81u	67,150 63,430		CLEAVERS,
AGRICULTURAL,	July 12, June 20, '00	1. x .503	5.4.9 .8048 .5.8	81,300	57,720 45,720 53,181	3,00	RAILROAD
ARCHITECTURAL	22	1. x .505 .995 x .487	.5u5 .485		57.821 60.350	2,00 1,50	MINING

and HYDRAULIC The three latter being of castings for the U. S. Battleship "Maine."

Founders of High Grade Castings of Atlas Metal and Manufacturers of Superior Edge Tools and Tool Steel of Atlas Metal.

First Class Castings of this Metal, of any Weight, Size or Thickness, of Uniform Structure and Properties Throughout. Sample order solicited.

Information and estimates on application.

THE ALLENTOWN ROLLING MILLS, Telephone No. 1731. ALLENTOWN, PA.

Blast Furnaces, Rolling Mills, Foundry and Machine Shops. Manufacturers of General Machine Shop and Foundry Work.

Structural Iron Work, Highway Bridges, Castings, Etc. Railroad Switches, Frogs, Crossings, Etc. Railroad Signals and Interlocking Apparatus for Steam and Trolley Roads.

SCOTT DIBERT, PRES. T. C. DU PONT, VICE PRES.

WM. H. HAWS, GEN. MOB. JOHN H. WATERS, SECY.-TREAS INCORPORATED 1899.

MINING

W. H. HAWS FIRE BRICK CO.,

MANUFACTURERS OF

HIGH GRADE SILICA BRICK.

Special Shapes Made to Order.

Annual Capacity, 15,000,000.

Office and Works. MT. UNION, Huntingdon Co., Pa.

Pittsburg Agent, DAVID DIBERT, 311 Penn Building.

FINE GRAY IRON CASTINGS.

True as a die to every outline of the pattern.

High Grade Brass and Bronze Castings. PRICES RIGHT.

I. S. SPENCER'S SONS,

GUILFORD, CONN

IRON CASTINGS. Wheeling Mold and Foundry Co., Wheeling, W. Va Pittsburgh Office, 1212 Carnegie Bldg.



ESTABLISHED 1856.

HENRY MAURER & SON, MANUFACTURERS OF

FIRE BRICK

of all Shapes and Sizes.

420 E. 23d St., New York. Send for Illustrated Catalogue.

ESTABLISHED 1964.

GARDNER BROS., James Gardner & Son. Hanufacturers of "Standard Savage"

Fire Brick for all Purposes.
Office, Comerchand, Mo., P. O. Box 24
Agents: B. Wallace & Co., Baltimore, Md. Cleveland
Builders' Supply Co., Cleveland, O. E. E. Melick,
Crozer Building, Philadelphia.

Established 1848.

Ostrander Fire Brick Company

MANUFACTURE FIRE BRICK FOR ALL PURPOSES.

Works at TROY, N. Y., and OSTRANDER, N. J.

Main Office, TROY, N. Y., to which correspondence should be addressed. PRESBREY

FIRE BRICK WORKS, TAUNTON, MASS. The Best Quality

FIRE BRICK

For IRON or BRASS FOUNDRIES and ALL FURNACES.

MARINE, MACHINE.

Up to 30 in. Diam: or 15 Tons Weight.

FULLY FINISHED WORK A SPECIALTY.

Write us for prices.

EASTERN FORGE CO.

OF MASS.,

72 Kilby Street, BOSTON, MASS.

Works, NASHUA, N. H.

PATENT TUMBLING BARRELS.

MANY VARIETIES.

For all Kinds of Work. Send for New Catalogue.

Manlius. N. Y. HENDERSON BROS., WATERBURY, CONN.

COMPLETE PLANTS DESIGNED AND ERECTED WITH QUARANTEED RESULTS.

BILLET AND SLAB CONVEYORS. BAR IRON CONVEYORS, MECHANICAL BOSHES.

Labor Saving Devices and Conveying Machinery of All Kinds.

HEYL & PATTERSON.

Pittsburgh, Pa.

WAGON LARDWARE Forgings,

We think you would do well to write us when you want FORGINGS, BENDING or shaping.

We are constantly adding to our line of WAGON HARDWARE, and to reinforce it we have started a new department to manufacture machines for blacksmith shops. Send for circular.

If you SEE ANYTHING of interest, better "nail it," as we change this "ad" more or less every week to show our different lines.

Cable Address "FORGEMEN PITTSBURG."



JAS. H. BAKER MFG. CO. PITTSBURG, PA. APPLIED FOR

Chicago Drop Forge & Fary. Co.

WORKS ESTABLISHED 1880

DROP

FORGINGS

Of All Kinds.

KENSINGTON, ILLS.

28 minutes South of Chicago by Ills. Central R. R. Suburban trains

THE

Chemical Analysis of

ANDREW ALEXANDER BLAIR.

Graduate United States Naval Academy, 1866 Chief Chemist United States Board appointed to test Iron, Steel, and other Metals, 1875 Chief Chemist United States Geological Sur vey and Tenth Census, 1880; Member Amer ican Philosophical Society, Etc.

New (Third) Edition. Illustrated 8vo. Half Morocce, \$4.00

A complete account of all the bes methods for the analysis of Iron, Steel Iron Ores, Lime Stone, Clay, Sand, Fur nace Gases, etc., etc. Contains amon, new methods never before published. new rapid method for the determination of Nickel in Steel by G. H. CHASE,

Sent, post-paid, on receipt of price by

DAVID WILLIAMS COMPANY,

Publishers and Booksellers.

232-238 WILLIAM ST ..

BUILT TO ORDER.

Capacity up to 20,000 lbs. in single piece and 16 ft. in diameter. SPECIAL MACHINERY HYDRAULIC MACHINE CRUCIBLE AND OPEN HEARTH HYDRAULIC MACHINERY, HIGH SPEED MACHINERY, STEEL CASTINGS, ₩ lb. to 3000 lbs

IRON and STEEL FORGINGS.

PATENT

PIPE CUTTING MACHINES, IMPROVED RAIL BENDERS. Accuracy, Prompt Delivery.

P. HOLLINGSWORTH MORRIS, 1501 So. Front St., Philadelphia, Pa.

FRANKFORD STEEL COMPANY.

ELLWOOD CITY, LAWRENCE CO., PA.

Railroad, Marine and Machine. All shapes.

SHAFTING

IN THE ROUGH, ROUGH TURNED or FINISHED.

CHICAGO OFFICE. 1020-1021 Monadnock Bldg., Frederick H. Mason, Mgr.

Office, Fidelity Mutual Building.
PHILADELPHIA.

THAT ARE MOULDED TRUE TO PATTERN. THAT ARE OF TOUGH AND UNIFORM METAL THAT ARE EASILY MACHINED (NO HARD SPOTS). THAT ARE FREE FROM BLOW OR SAND HOLES. THAT WILL TAKE A FINE POLISH. THAT WILL HARDEN LIKE TOOL STEEL.

SEND SAMPLES FOR PRICES, STATING QUANTITY REQUIRED.

HOMER F. LIVERMORE,

85 and 87 PEARL ST. BOSTON, MASS.

GREY IRON CASTINGS

FOR ROLLING MILLS, GLASS WORKS, ETC., and all purposes requiring a first-class product which we are in position to supply promptly and at prices that it will pay you to investigate. Send us your specifications for an estimate.

THE NEW ALBANY MFG. CO., NEW ALBANY, IND.

Consolidated Railway Electric Lighting & Equipment Co. DROP FORGINGS

For Tools, Steam Pumps, Machine Parts, Printing Presses, Agricultural Implements, Automobiles, Carriages and Bicycles.

The "Axle Light" system of Electric Lights and Fans for Passenger Cars. The Lindstrom Lever Brake for Steam Railway Cars.

General Offices: 100 Broadway, New York.

J. L. WATSON,

3.

a,

0.

ng.

rs).

ES.

SS.

JNO. T. DICKINSON,

JNO. N. ABBOTT.

Secretary and Treasurer.

Gen'l Agent.

Vice-Prest. and Gen'l figr.

F. W. BENHAM, Manager, Drop Forge Department.

FACTORY,

DERBY, CONNECTICUT.

FORGINGS

FORGING CO., Ind. Ind. SEND SPECIFICATIONS FOR PRICE.

facilities for producing LIGHT GRAY IRON CASTING.

quantity. Work polished, nickel-plated

CODLING MFG. CO., Bristol, Conn.

We have excellent facilities for pro-ducing

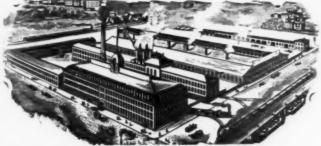
ASTING

Pittsburgh Shear Knife and Machine Co.,

47th St. and A. V. Ry., PITTSBURGH, PA.

Rough Turned or Finished Complete.

SOLID STEEL SHEAR KNIVES, STEAM HAMMERS. PUNCHES and SHEARS, SPECIAL MACHINERY.



TO ORDER. HIGH GRADE ONLY.

ALBANY . . FOUNDRY CO., ALBANY, N. Y.

Iron and Steel OF EVERY DESCRIPTION. TITUSVILLE FORGE CO. TITUSVILLE, PA.

TILGHMAN'S PATENT SAND BLAST MACHINERY,

EDGAR T. WARD & SONS, Boston.

GEO. NASH & CO., Chicago.

Pennsylvania Engineering Works,

OFFICES and WORKS, - S. Jefferson Street, - NEW CASTLE, PA.

General Machine Blast Furnace and **Steel Plant Construction.** and Plate Work.

We build Pig, Hot Metal and Slag Cars, Charging Buggies, Large Ladles for Open-Hearth and Bessemer Plants, and Hydraulic Machinery.

We are specially equipped to build Heavy Shell Work, and solicit your inquiries.

Jones & Laughlins, Ltd.,

AMERICAN IRON AND STEEL WORKS, PITTSBURGH.

Branch House, Chicago, Ill. Branch Office, 220 Broadway, New York.

Cold Rolled Shafting, Pulleys, Hangers, Couplings

And Other Fittings for Power Transmission.

Our Cold Rolled Shafting is unequalled for quality and finish. Our Couplings, Hangers and Pulleys are of the highest grade, and especially designed for service and durability. Catalogue by mail upon request. Estimates promptly furnished. Large stock constantly on hand. Prompt shipments.

INSTALLATION OF COMPLETE MILL EQUIPMENTS A SPECIALTY.

W. HARRY BROWN, Vice-Pres.

5,000 Acres of Coal.

5,000 Tons Daily Capacity.

350 Individual Coal and Coke Cars.

YOUGHIOGHENY COAL

For Steel Works, Rolling Mills, Tin Plate Works, Locomotive Fuel, etc.

COKING COAL

For Bee-Hive or By-Product Ovens.

Our WASHINGTON COKE

Is unsurpassed for uniform purity and general satisfaction in Blast Furnace and Cupcia Practice. General Office.

Sales Office, Pittsburg, Pa.

DAWSON, FAYETTE CO., PA.

mmmm

N. P. HYNDMAN, Sales Agent.

Chemicals and Chemical Apparatus

Steel and Iron Analysis,

CALORIMETERS. PYROMETERS.

BALANCES.

Semplete Laboratory Outfits.

EIMER & AMEND, NEW YORK.

KENNEDY, JULIAN Engineer.

Pittsburg, Pa., U.S.A.

MACHINERY AND PLANT FOR THE ECONOMICAL PRODUCTION OF IRON AND STEEL.

Consultations and expert work in GENERAL ENGINEERING PRACTICE. Cable address, "ENGINEER PITTSBURG.

THE BELDEN MACHINE CO..

Whalley Ave. and Tryon St., NEW HAVEN, CONN.

Drop Forging in all its branches. Special attention given to Automobile, Locomobile and all Electrical work. Estimates given from blue prints or models.

BESSEMER COKE COMPANY, CONNELLSVILLE COKE

FURNACE, FOUNDRY AND CRUSHED COKE,
Mines and Ovens in Connellsville Region.

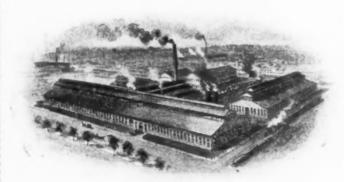
P. R. R., B. & O. R. R. and P. & L. E. R. R. Connections.

GAPACITY, 75 CARS DAILY. INDIVIDUAL CARS. Offices, Lewis Block PITTSBURGH, PA.

WEST SIDE FOUNDRY CO.

TROY, N. Y. LIGHT GREY IRON AND BRONZE CASTINGS.

CASTINGS



Address all communications to DU BOIS IRON WORKS.

F. G. LAUER, General Manager.

JOHN E. DU BOIS, Proprietor.

Du Bois Iron Works

GENERAL MACHINE SHOP AND FOUNDRY

... Manufacturers of

Tubular Boiler, Mining, Tannery, Saw-Mill Machinery and Gray Iron Castings.

.... Contractors

Structural Iron, Sheet Iron Tanks, Hoppers and Conveying Machinery.

DU BOIS, PA.

፠**ኯኯኯኯኯኯኯኯኯኯኯኯኯኯኯኯኯኯኯኯኯኯኯኯኯኯኯኯ**፠

A Combination That Beats Them All.

DOOWYAN SAND RAMMERS



MOLDING MACHINES.

molding, the superior quality of castings, freedom from swells, uniformity, saving in chipping, fitting and machine work enable our machines to pay for themselves in sixty to ninety days.

> Write for Catalogue.



He puts up 200 flasks per day.

MAYWOOD FOUNDRY & MACHINE CO.,

505-507 Monadnock Block, Chicago, Ills., U. S. A. Agent for Germany, Franz Küstner, 9 Kalserstrasse, Dreade

UNION STEEL CASTING COMPANY. 61st St., Pittsburgh, Pa



Light Castings of Soft Iron and Fine Moulding. Completely equipped Machine and Brass Patters Shops. Japanning, Bronzing, Galvanizing and Nickeling Departments.

Send Sample Castings for Estimate,

CLEVELAND, O.

R. D. WOOD & CO.

400 Chestnut St., PHILADELPHIA.

SOLE MAKERS OF THE

TAYLOR GAS PRODUCER.

PATENTED

OWITED STATES ALL FOREIGN

THE BEST PRODUCER

for either Bituminous or Anthracite Coal or Lignite

CONTINUOUS

OPERATION

as the fire cleaned withous topping the fle of gas.

LESS LABOR REQUIRED

BESD FOR

Gas Engine Plants, Hydraulic Tools and Machinery. Camden High Pressure Valves.



Stationary

Pertable **PYROMETERS**

rom 500 to 3,000

FDWARD BROWN.

309 Walnut St.. PHILADELPHIA

Established 1860.

Send for Catalogu

HE FORTER-N NGINEERING CO., INC.,

WESTINCHOUSE BLDG., PITTSBUF ENGINEERS AND CONTRACTORS.

Open Hearth, Tube Welding, Heating and Annealing Furnaces. Plants Built Complete.

Best Work. Modern Design. Guaranteed Results. We Build the

Best Gas Producer in the Market.

Swindell (ias Producers. eal

400 built in past three years. 300 Furnaces for all purposes built in past three years,

WM. SWINDELL & BROS.,

German National Bank Building, Pittsburg, Pa.

Pittsburgh. Pa Builders of every description of FURNACES AND GAS PRODUCERS

FOR IRON & STEEL WORKS.

Contracting Engineer,

716 Ferguson Block, Third Avenue. PITTSBURGH, PA.

Blast Furnace Construction. Patentee Central Combustion Chamber 4 Pass

Agent for C. H. Foote Patent 2 and 4 Pass Fire Brick Stove.

HENRY AIKEN, Consulting Mechanical Engineer

Rooms 400, 401, 403, 404 and 405, Lewis Block, PITTSBURGH, PA.

........ Cable Address, "Wellsea Cleveland." THE

Wellman-Seaver Engineering Co.,

Consulting and Contracting

CLEVELAND, O., U. S. A.

Steel Works, Rolling Mills, Metallur-gical Furnaces, Manufacturing Build-ings, Machinery for the most econom-ical handling of all ginds of material.

Sole Manufacturers of FORTER WATER-SEALED

REVERSING VALVES

FRASER-TALBOT MECHAN-ICAL GAS PRODUCERS.

LONDON OFFICE: 47 Victoria St., Westminster.

The S. R. Smythe Company.

Park Building, Pittsburgh, Pa.

Open Hearth "Steel Tube" and Rolling Mills Complete.

Smythe Gas Producers, 3 Types, most Advanced and Unequaled. Steam and Hydraulic Machinery, "Buildings," etc. NOTE.-OVER 100 PLANTS BUILT AND IN OPERATION.

W. McCLURE, SON & CO.,

Successors to McClure & Amsler,

ENGINEERS AND CONTRACTORS.

SMITH BLOCK, PITTSBURG, PA.

BLAST FURNACE CONSTRUCTION A SPECIALTY.

Sole Representatives, U. S. A. WASSICKS & CROOKE'S PATENT THREE PASS FIRE-BRICK STOVES, With McClure & Amsler's and G. W. McClure's Patent Improvements.

McCLURE & AMSLER'S PATENT TWO PASS FIRE-BRICK STOVES, With Center Combustion Chamber.

Open Hearth and Heating Furnaces, Soaking Pits, All Kinds Brick-Work.

Duff's Patent Water Seal Gas Producer.

Over 900 in Successful Operation.

Over 800 Under Construction.

INVESTIGATION SOLICITED.

THE DUFF PATENTS CO.,

924 Carnegie Building, Pittsburgh, Pa

Open Hearth Crucible Annealing Heating

ED. E. ERIKSON.

Consulting and Contracting Garrison Bldg., Wood St. and Third Ave., PITTSBURG, PA.

KENNEDY, WALTER Contracting and Consulting

631 PENN AVE., PITTSBURG, PA.

....LONG DISTANCE 'PHONE, 3174.

CONSULTING ENGINEERS.

Blast Furnaces, Bessemer and Open Hearth Steel Works, Continuous Mills, Hoop Mills, Merchant Alus, Automatic Mill Tables, Labor Saving Devices relating to Rolling Mills, Steam and Hydraulic Machinery. Consulting and Constructing Engineers for the Republic Iron and Steel Co.

Rooms 702-707 Ferguson Building, Pittsburgh, Pa.

ROCKWELL ENGINEERING COMPANY. FURNACE ENGINEERS.

Builders of OIL, CAS, COAL FURNACES Fuel Oil Burning Appliances.

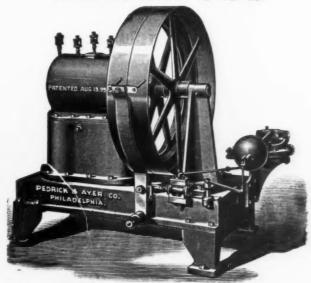
..... Write for Catalogues.

HAVEMEYER BLDG. NEW YORK.

AUTOMATIC COMPOUND BELT AIR COMPRESSOR.

B

PATENTED AUGUST 13th, 71895.



Built in two sizes, Nos. 1 and 2.

No.	Size of Cyl- inders in inches.	Revolutions perminute.	Cubic Feet of Free Air.	Horse Power re- quired.	Size of Pulleys in inches.	Shipping Weight of Compressor	Floor Space in inches.	Telegraphic Symbol
1 2	11x 6 6x 6	100-16 0	82-50	2-3½	40x5	2875 lbs.	60x40	Parian
	15x10 8x10	90-120	90-120	9-15	60x6	5870 lbs.	76x60	Parish

Pedrick & Ayer Co., Spring Garden Station, PHILADELPHIA, PA.

Manning, Maxwell & Moore, Sole Agents, 85, 87, 89 Liberty St., New York City.

22 So. Canal St., Chicago, III. Park Bldg., Pittsburgh. Williamson Building, Cleveland, O.

FROM THE QUAKER CIT



Manufacturers FOUNDRY FACINGS and BLACKINGS. W. PAKSON CO., Phila., Pa.

A TRUTHFUL GAGE IS THE ONLY GOOD GAGE.



CROSBY STEAM APPLIANCES EXCEL.

Water Relief Valves Blow-Off Valves.

Steam Engine Indica- Stationary and Marine Valves. tors, Recording Gages.

Revolution Counters, Globe and Angle Valves

Pressure and Vacuum Single Bell Chime Whistles. Lubricators, etc., etc | Send for Catalog.

CROSBY STEAM GAGE AND VALVE CO., Boston, New York, Chicago, London.



The Most Reliable Valve For High Pres sures Made.



THOROUGH INSPECTIONS and

INSURANCE AGAINST LOSS OR DAMAGE TO PROPERTY AND LOSS OF LIFE AND INJURY TO PERSONS CAUSED BY

Steam Boiler **Explosions.**

J. ALLEN, WIT. B. FRANKLIN, F. B. ALLEN, Second Vice-President. J. B. PIERCE, Secretary. L. B. BRAINERD. L. F. MIDDLEBROOK, Asst. Secretary.



Send for a Sample of Patent Self-Lubricating Packing.

ROBT. MORRISON, 5034 Arsenal Street ST. LCUIS, MO.



Highest Efficiency attained in the STOVER **GASOLINE** ENGINE.

The best is always the

10 River St. STOVER ENGINE WORKS. Freeport, Ill.

CHARTER GASOLINE ENGINE.



State your Power Needs or your Cus-omers' Power Needs.

CHARTER GAS ENGINE CO., Box 624, Sterling, Ill.

GALVANIZED IRON STORAGE TANKS



From 10 gals. to 7,000 gals Black iron tanks any size. GAS ENGINES from ½ H. P. up.
For particulars address

Clarendon Boiler Works, N. Clarendon, Pa. Please mention Iron Age.



& HARLIN MFG. CO., McNAB

BRASS COCKS and VALVES

FOR STEAM, WATER and GAS.



Wrought Iron Pipe and Fittings, Plumbers' Materials, Seamless Brass and Copper Tubes. 56 and 60 JOHN ST., N. Y.



Catalogue and Price-List will be sent to the Trade with their first order, or by express, if desired, before ordering.

Blast Furnaces, Steel Plants, Bollers, Tanks, etc.

Draft Stacks. Riveted Steel Pipe. Tank Cars.

IRON TANKS. STAND PIPES. WATER TOWERS.

BOILERS. DRAFT STACKS RIVETED PIPE.

WARREN CITY BOILER WORKS, WARREN; O.



THE MIETZ & WEISS GAS and KEROSENE ENGINES.

Burns KEROSENE. Cheaper and safer than Gasoline. Automatic; simple and reliable, NO electric battery, SELF IGNITION. Perfect regulation. Belted or directly coupled to dynamo for electric lighting AND ALL POWER PURPOSES. Send for catalogue.

MIETZ, 128-138 Mott Street, N. Y. City.

Markt & Co., Ltd., London, Hamburg and Paris.

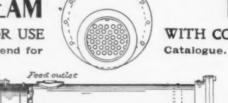
HORIZONIAL SI

WELL ADAPTED FOR USE

Send for

TAUNTON LOCOMOTIVE MFG. CO.

TAUNTON, MASS. FEED-WATER HEATERS.



TUBE HEATERS

WITH COMPOUND ENGINES.

AGENTS: CHAS. H. PAINE, 85 Liberty St., N. Y.

H. S. WALKER, 1502 Monadnock, Chicago. TRACY ENGINEERING COMPANY, 151-153 Tremont St., San Francisco, Cal.

H. M. FIFE, 1218 Holland Building, St. Louis.

SURFACE CONDENSERS, Etc.



FLANGES.

Soft Steel Weldless Flanges, Forged and Rolled from

SOLID STEEL INCOTS,

Suitable for High Pressure Steam, Water or Gas Lines. For details as to prices, etc., address

LATROBE STEEL COMPANY.

1200 GIRARD BUILDING, PHILA.



CAR DEPARTMENT. THE ATLAS BOLT AND SCREW CO.

CLEVELAND, OHIO,

MANUFACTURERS OF SMALL CARS OF ALL KINDS FOR ALL PURPOSES, STEEL CONSTRUCTION A SPECIALTY. COMPLETE EQUIPMENT OF INDUSTRIAL RAILROADS, WHEEL-BARROWS, ETC.
NEW YORK OFFICE: 29 BROADWAY.



No. 160 GABLE ROTTOM STEEL CAR Made in 4 sizes.

EEDWA



NOLDS CORL

BLOWING AND HOISTING GINES FOR ROLLING MILLS, ELECTRIC LIGHTING AND STREET RAILWAYS.

SAW MILL, FLOUR MILL AND MINING MACHINER



Castern Representative, T. W. PHILLIPS, 4 Market Square, Providence, R I.

HEAVY DUTY CORLISS ENGINES.

Best Design. Best Efficiency. Best Workmanship.

Condensers. Compressors, Pumping Machinery Power Transmissions.

NEWPORT NEWS SHIPBUILDING & DRY DOCK CO WORKS AT NEWPORT NEWS VA.

(On Hampton Reads.)

SHIP AND ENGINE BUILDERS.

Equipped with a Basin Dry Dock capable of docking a vessel 600 feet long, drawing 25 feet of water, at any stage of the tide. Repairs made promptly and at reasonable rates.

For estimates and further particulars, address C. B. ORCUTT, Pres't, NO. 1 Broadway, New York.

SOUTHWARK FOUNDRY & MACHINE CO.

PHILADELPHIA. PA..

PORTER-ALLEN AUTOMATIC CUT-OFF ENGINE.

Used extensively in Rolling Mills and Steel Works; also for electrical purposes. High economy. Close regulation.

Also builders of Blowing Engines for Blast Furnaces; Reversing Engines for Steel Works; Centrifugal Pumps; Rotary Pumps; Weiss Condensers, etc.

INQUIRIES SOLICITED.

WILLIAM TOD & CO., Youngstown, Ohio.



Reversing Engines, Blowing Engines, Converters, Hydraulic and Special heavy machinery for the iron and steel trades.

For Direct Electrical and all High-Class Work.

SEWARD S. BABBITT, Building, PITTSBURGH.

IRON CASTINGS, MACHINERY P FORGINGS

THE GEO. B. SENNETT CO. YOUNGSTOWN, OHIO.

We Solicit Correspondence.

Estimates promptly furnished on all kinds of machinery, castings and forgings, rolling mill, blast furnace and general machinery.



DURANT'S COUNTING MACHINES will keep an accurate record of the amount of work performed by your automatic machinery. Corrects and pr Mistakes. Counters received highest award at the World's Fair.

SEND FOR CATALOGUE.

W. N. DURANT, 283 Twenty-second Street, MILWAUKEE, WIS.



Of all kinds for automatically controlling Steam, Water and Air Pressures.

SEND US YOUR PROBLEMS.

MASON REGULATOR Co., Boston, Mass.



All Purposes.

Water, Gas. Steam. Ammonia, etc., and

FIRE HYDRANTS.

SEND FOR CATALOGUE

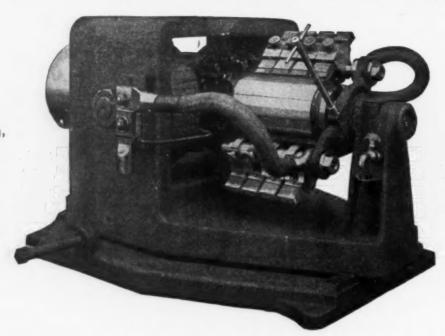


CHAPMAN VALVE MFG. CO., INDIAN ORCHARD, MASS.

DYNAMOS

FOR THE ELECTRO-DEPOSITION OF METALS.

Electric
Machinery
for
Electrotyping,
ELECTRO
PLATING
and
Electrolytic
Treatment
of
Metals.



Electric
Lighting
Generators
for
Small or
Large Plants.
Electric
Power
Plants for
one machine
or a large
factory.

Send for Catalogue.

New York Office, 149 Broadway.

EDDY ELECTRIC MFG. CO., Windsor, Conn., U. S A.

THE GENERAL ELECTRIC COMPANY'S



Long burning Arc Lamp for incandescent or power circuits.

Arc Lamps for Factory Lighting

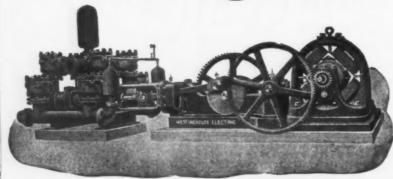
enable your workmen to work rapidly and accurately regardless of daylight.

GENERAL OFFICE: Schenectady, N. Y.

New York Office: 44 Broad St.

Sales Offices In All Large Cities.

Westinghouse Motors



Westinghouse D. C. Motor Operating Pump.

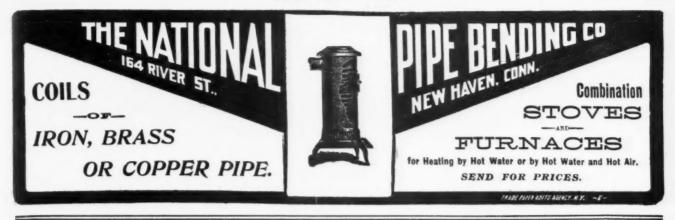
Operate in every class of stationary service,—Factories, Machine Shops, Mills, Mines and Office Buildings.

Westinghouse Electric

& Manufacturing Co.,

All Principal Cities in U.S. and Canada.

PITTSBURG, PA.



Best Books for an Iron and Steel Works Chemist.

Recommended by ALBERT LADD COLBY.

We quote from an article by Mr Colby published in THE IRON AGE of June 15, 1899, and append a list of the books which are recommended collectively for the iron and steel works chemist, with their prices:

"There ought to be a good long shelf of books in the office or balance room of every iron and steel works' laboratory, for they are as essential to its proper equipment as the apparatus and chemicals. If granted the opportunity the chemist of an iron or steel works can give practical aid in so many lines that his employer will find it to his direct advantage to encourage his chemist by placing the best books on the subject at his disposal. * * The writer based the recommendations on a personal examination of all of the books printed in English on analytical chemistry and allied subjects, 112 in number, on a long experience in the use of many of them and on an intimate knowledge of the many ways in which a chemist can aid his employer in the manufacture of iron and steel. * * The most successful professional chemists are those willing to still class themselves as students, and it is safe to say that in every one of the books recommended in this article at least one good new idea may be found, which if applied by the chemist in his laboratory work will soon save his employer many times the cost of the book."

	Arnold, J. O. Steel Works Analysis\$3.0 Blair, A. A. The Chemical Analysis of Iron 4.0		Classen, A. Quantitative Chemical Analysis by Electrolysis\$3.00
			Smith, E. F. Electro-Chemical Analysis 1.25
3	Lord, M. W. Notes on Metallurgical		
	Analysis, Chemical	25 17	Gill, A. H. Gas and Fuel Analysis for En-
4	Methods of Iron and Steel Analysis About		gineers 1.25
	Pittsburgh	00 18	Hempel, W. Methods of Gas Analysis 1.90
5	Crookes, Wm. Select Methods of Chemical	19	Winkler, Clemens. Handbook of Technical
2	Analysis 8.		Gas Analysis 3.00
	Fresenius, C. R. A System of Instruction		Poole, Herman. The Calorific Power of
0	in Quantitative Chemical Analysis 6.		
	~		Fuels 3.00
7	Phillips, H. Joshua. Engineering Chemistry 4.		Snow, W. B. Steam Boiler Practice 3.00
8	Stillman, T. B. Engineering Chemistry 4.	50 22	Comey, A. M. Dictionary of Chemical
0	Cairns, F. A. Manual of Quantitative		Solubilities 5.00
9	Chemical Analysis 2.	.00 23	Vulté, H. T., and Neustadt. Laboratory
	Cheever, B. WSmith, F. C. Select Meth-	0	Manual of Inorganic Preparations 2.00
10	ods in Quantitative Analysis	75 24	Clarke, F. W. The Constants of Nature,
	Talbot, H. P. Introductory Course in	.13 -4	Part V., New Edition 2.00
11		40	
	Quantitative Analysis	.50 25	Cremer, J. H., and Bicknell, G. A. Chemical
13	Thorpe, T. E. Quantitative Chemical	4.0	and Metallurgical Handbook 3.00
	Analysis	.50 26	Kent, Wm. The Mechanical Engineer's
13	Ostwald, W. Scientific Foundations of Ana-		Pocket Book 5.00
	lytical Chemistry	.00	3.00
14	Sutton, Francis. Systematic Handbook of	-	
	Volumetric Analysis 4	.50	\$78.00

These 26 books, amounting to \$78.00, will be sent prepaid for \$70.00. Separately the books are furnished at the list prices, prepaid.

DAVID WILLIAMS COMPANY, Publishers and Booksellers,

232-238 William Street, New York.

THE NEW ENGLAND MOTOR CO., LOWELL, MASS., U. S. A.

High Grade Dynamos and Motors. Highest Efficiency. Quick Deliveries.

STEEL CHIMNEYS

W. W. LINDSAY & CO., ENGINEERS and CONSTRUCTORS.

HARRISON BUILDING.

PHILADELPHIA.

The Wood's Horizontal and Vertical Water Tube Boilers

by long use and hard service have gained a reputation superior to all others. For efficiency, durability and economy they have no equal. Never had an accident, and in ten years' constant use repairs of any kind are almost unknown. They are made on the most scientific and simple principles, no cast iron, manifolds, headers or bent tubes used in their construction; they are accessible to every part by removing but three manholes. Cost less for maintenance, easiest managed, most simply constructed, perfect circulation, drier steam, lowest stack temperature and almost absolute freedom from scale and incrustation. We are the pathfinders of this type of boilers and have them in use in almost every quarter of the Globe.

For waste heat boilers we challenge competition. Send for illustrated catalogue, Home Office

JOHN WOOD MANUFACTURING CO.,

Conshohocken, Pa., near Philadelphia.

DO YOU USE

UNION COUPLINGS?

If so, try the "Dart Patent." THOUSANDS IN USE.

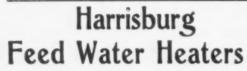
A bronze ground joint, with strong malleable iron ends and nut. Non-corrosive.

MANUFACTURED BY

E. M. DART MFG. CO..

PROVIDENCE, R. I., U. S. A.

Write us for Prices.



Of Pure, Seamless Copper Colls,

GUARANTEED TO BE THE

Most Effective, Most Durable and Cheapest Heater Manufactured.

Write for Descriptive Catalogue.

Copper, Iron and Brass Pipe Coils and Bends of any desired shape.

MANUFACTURED BY

The Harrisburg Pipe Bending Company, Ltd., 775 Herr St., Harrisburg, Pa.



AMERICAN STANDARD

Whitlock Coil Pipe Co., Hartford, Conn.

Main Office and Works Elmwood (near Hartford).
PIPE COILS AND BENDS.

EED WATER HEATER.



To the Reason

that it invariably "measures up" to the unique claims made for it,

The Webster System of Low Pressure Steam Heating

owes its phenomenal success. Architects and Consulting Engineers equipping large buildings where the best results will be insisted upon are invited to correspond with us when seeking "light" on heat.

Warren Webster & Co. CAMDEN, N. J.

NEW YORK, 322 BROADWAY PHILADA., 3106 STEPHEN GIRARD BLDG. CHICAGO, 1809 MONADNOCK BLDG. BOSTON, 728 TREMONT BLDG.





THE RAND DRILL COMPANY

PIONEERS IN ROCK DRILLING AND AIR COMPRESSING MACHINERY,

128 BROADWAY, NEW YORK

Has been awarded

THREE GOLD MEDALS

... PARIS EXPOSITION ...

Air Compressors and Rock Drills.



DON'T THAT JAR YOU?

PILE DRIVER,

We mean that old pile driver you are using.
Send for one of our No. 6 catalogues that tells about our Pile Sinking Outfit. Sinks them any size, in deep or shoal water.

Pest thirg ever sold. Only two men and no noise. Cheap, too.

EDSON MANUFACTURING CO.,

182-186 Commercial St. ROSTON MASS.

182-186 Commercial St., BOSTON, MASS.



Solid Stream of Dollars!

Ever think how much of all the heat put into steam in order to get power out of an engine is wasted—thrown to the four winds?

Maybe 5 per cent, of the heat (and seldom is this exceeded, is converted into power by a non-condensing engine, and only something over 15 per cent. In the very best of the condensing engines. Just think of the stream of dollars that is constantly passing through an exhaust main because so little to the heat is used! If you do realize to you will make every effort to utilize some portion of your exhaust through a good feed-water heater.



With a COCHRANE HEATER you can make all the saving there is to be made, whether it is only in heating and purifying the feed water, whether heating and purifying the feed water and heating water for dye-house or other manufacturing purposes, or whether heating and purifying the feed-water, and providing a heating or drying system with exhaust ateam as well. One of these COCHRANE FATEKS makes the prettiest kind of an installation in a condensing plant, for the economizers, by passing their exhaust through this heater, can be made even more economical than the main engine run condensing. The reasons are very plain that Heaters should be used. Now it comes down to which Heater to use, and right there you cannot afford to leave out of consideration the

"Cochranes,"

because these have all the "ear marks" and "hall marks" of the best Heater that is built -plain, practical, commonsense, everyday appliances; substantial, free from repairs, durable.

Our Catalogue (which may be had for the asking), is sure to interest

HARRISON SAFETY BOILER WORKS.

Col. Sta.,

PHILA., PA.

60-TON PORTABLE Hydraulic Presses. New Design.

For pressing on and off, Crank's Crank Pins, heaves, Pinions, Car Wheels, etc., by hand. Two sizes. Please send for circular.

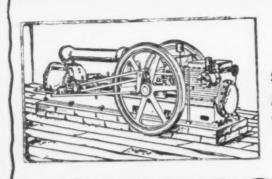
VULCAN IRON WORKS,

100 Milwaukee Ave.,

CHICAGO.

Dynamo Construction. Electrical and Mechanical. Being a technical description of typical machines for the generation of high pressure currents and others apparatus and the calculations connected therewith. Compiled and critically examined by the author. By Gisebar Karr, M. I. C. E. With 25 sheets of working drawings and bit illustrations. 4to, cloth.

or sale by David Williams Co., 232 William St., M. S.



THE NORWALK IRON WORKS CO., SOUTH NORWALK, CONN., MAKERS OF AIR AND GAS COMPRESSORS FOR ANY VOLUME AND FOR ANY PRESSURE.

FOR EVERY APPLICATION OF COMPRESSED AIR POWER. CLAYTON AIR COMPRESSOR WORKS,

NEW YORK. 26 Certiandt St., - - - NEW Complete Catalogue upon Application.





Paris Exposition

The following awards have been officially announced:

CRAND PRIX Group XI, Class 63, Mining Apparatus. GOLD MEDAL IV, " 21, Compress " VI, " 28, Models of Apparatus Used on hicago Drainage Canal. SILVER MEDAL " IV, " 20, Small Motors or Channelers Various Motors. HONORABLE MENTION

This Company has received the only CRAND PRIX awarded to any manufacturer in this line.

THE

INGERSOLL-SERGEANT

DRILL COMPANY, 26 CORTLANDT ST.,

NEW YORK.





THE

DOUBLE THE EFFICIENCY OF PLAIN ROUND TUBE. OUR. Catalogue

Tells all about it. Send for a copy.

HEAT TRANSMISSION CO., 40 Mable Ave., Danbury, Conn.

The Fisher Air Compressor

CAN ATTACH TANDEM TO ANY STEAM ENGINE OR OPERATED BY BELT POWER.

SIMPLEST IN CONSTRUCTION, LESS IN PRICE, GREATEST EFFICIENCY, ECONOMICAL, DURABILITY UNEQUALED.

SEDGWICK-FISHER COMPANY,

53-55 So. Clinton St., CHICAGO.



DIXON'S



THINGS

AND DOES THEM THOROUGHLY.

Stops the Belt from slipping,

Pleases the Man who uses it.

NOTHING EQUALS IT.

Sample size FREE. Send for one.

JOSEPH DIXON CRUCIBLE CO., Jersey City, N. J.

London Office, 28 Victoria St., Westminster.

WITHOUT A RIVET,



CLEVELAND ELEVATOR BUCKET CO.

Thus insuring a smooth inside surface and free delivery. Any gauge or length of bucket to 16 feet long, of one continuous body piece.

OFFICE AND FACTORY,

225 ST. CLAIR STREET, CLEVELAND, O., U. S. A.

Shafting, Pulleys, Hangers, Etc. TALCOTT'S CLINCHING BELT HOOKS

WITH ALL THEIR ACCESSORIES.

We can furnish complete outfits of Power Transmitting Machinery for the equipment of Plants. Write us when in need of anything in this line. It will cost you only the "asking" to get one of our No. 11 catalogs.

Chambersburg, Pa. T. B. WOOD'S SONS.



ER

e

Friction Clutch Pulleys

Cut-Off Couplings.

Especially adapted for GAS ENGINES or MACHINERY of any kind.

The simplest, strongest and best clutch made. Has positive grip and absolute release. Requires little effort to throw friction in or out.

Four distinct catalogues issued and mailed free upon application, viz. : Pulley, Warm Air Furnace, Well Pumps, and Stoves.

HESS, SNYDER & CO., Massillon, O.



1219- Carpenter St., PHILADELPHIA.

55-57 Market Street, Chicago. 120 Pearl Street, Boston.

************* ALEXANDER BROS. BEST OAK Belting

412 N. Third St., Phila. A444444444444444444444

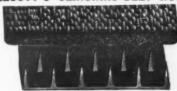


AMES SWORD CO.

Chicopee, Mass. Manufacturers of

Endless Silk Sewed Polishing Belts.

BRESPONDENCE SOLICITED



W. O. TALCOTT, Providence, R. I. Manufacturer of 170 Varieties of Belt Hooks. Send for Catalogue.

4040404040404 AUTOMOBILE BOILERS.

Address EGBERT P. WATSON, Elizabeth, M. J.





MANUFACTURING

SAGINAW, MICH., U. S. A.

New York Branch: 44 Dey St. Chicago Branch: 35 So. Canal St.

Sales Agencies in all the Principal Cities. Cable address : ENGRAVE. ABC and Lieber's Codes

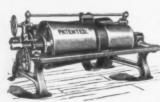
Dumbwaiters and Elevators.

We sell our Columbia Dumbwaiters on their merits. If they are not satisfactory and } as represented, you may return them at our expense. Send for Catalogue A.

Special prices to the trade. I. G. SPEIDEL.

Reading, Pa.

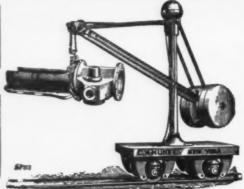
EVANS FRICTION CONE PULLEYS.



For varying speed of machine while running.

,000 sets in ransmitting from 1 to 40 H.-P.

S. F. EVANS, 85 Water St., Boston, Mass. C. W. BURTON, GRIFFILE & Co., London Agents



The Hunt System

of machinery for hoisting and handling beavy and bulky materials, Coal Hand-ling Machinery in particular.

HOISTING ENGINES

NOISELESS GRAVITY CONVEYOR "STEVEDORE" ROPE,

"INDUSTRIAL" RAILWAYS, Etc.

The Revolving Balanced Crane Car shown is a little movable derrick capa-ble of lifting 2 tons. The counterweight keeps the centre of gravity over the centre of the car at all times. Our line is a large one. Write us your requirements. Address the works direct

C. W. HUNT CO.,

Davis Ave., WEST NEW BRIGHTON,

The Aultman Company, CANTON, OHIO. CONVEYORS AND ELEVATORS

For handling Coal and Ashes and all other materials in either bulk or package.

SEND FOR CATALOGUE AND PRICES.

ASHERN OFFICE 718 FIDELITY BUILDING. PHILADELPHIA, PENNA

CO., FAIRMOUNT MACHINE

Twenty-second and Wood Sts., Philadelphia, Pa.

Shafting, Gearing, Self-Oiling Bearings, Friction Pulleys, Rope Transmission, Freight Elevators.

Looms, Harness Motions, Dobbies, Machinery for Winding, Spooling, Reeling, Beaming, Warping, Dyeing, Sizing, Scouring, &c

FACTORIES, MILLS, MINES, RAILWAYS, Etc

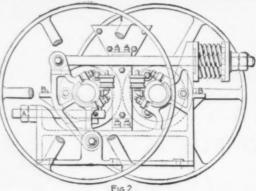
Files, Wrenches, Belts, Hammers, Siedges, Vises, Chucks, Jacks, Punches, Steam Gauges, Valves, Lathes, Hose, Packing, Pulleys, Sharting, Pipe and Fittings, Pumps, etc., etc.

SEND FOR NEW CATALOGIE.

THE GENERAL SUPPLY COMPANY, 40 JOHN ST., NEW YORK

まれるとのとうとうとうとうとうとうとうとうとうとうとうとうというとのか

Buchanan's Crushing Rolls.



sizes from 18in, in diameter to 60 in. Automatic Feed and Dust Covers, Phosphor Bronze Bearings, Steel Shafts, Steel Crushing Shells, Improved Patent Adjustment. Special Toothed Roll for Coke, Coal, etc. Rolls for cement mills-raw stone or clinker. We will send, free on application, our catalogue on Buchanan Rock Breakers, Buchanan's Crushing Rolls, Magnetic Separators.

Transmitting Machinery. Power

GEO. V. CRESSON COMPANY,

NEW YORK, 141 Liberty Street.

PHILADELPHIA, 18th St. and Allegheny Ave.

U. G. BUCHANAN, Consulting Engineer.
Department Crushing and Concentrating Machinery.

湖 あんあんあんあんあんあんあんきん きょうるんあんるん あんあんるん きんんんしん 形形

LINK BELT

ELEVATORS, CONVEYORS.

TO THE TANK THE TENT OF THE TE

Power Transmissions.

"Nodern Methods" Catalogue illustrates and describes machinery for handling

Coal, Ashes, Stone, Fertilizers, Cement, Grains, Barrels, Boxes.

ANY MATERIAL IN BULK OR PACKAGE.

Copy mailed on request.

Link-Belt Engineering Company,

Nicetown, Phila. Park Building, Pittsburgh, Pa. 49 Dey St., N. Y. City.

CALIFORNIA WIRE WORKS,

9 FREMONT STREET, SAN FRANCISCO, CALIFORNIA,
MANUFACTURERS AND CONTRACTORS.

Single and Double Rope Tramways and Cableways.

HALLIDIE PATENT ROPEWAYS.

for transporting ore, fuel, merchandise, sugar cane, etc. Hallidie Paten: Combined Scraper and Conveyor, plows and scrapes earth, etc., and conveys any distance.

Grip Pulleys, Improved Durable Wire Ropes.

Estimates and Designs Furnished. Send for Catalogue.

.....



COAL and ORE HANDLING MACHINERY, HANDLING MACHINERY for SHIP YARDS.

The Brown Hoisting Machinery Co.,

NEW YORK OFFICE Havemeyer Building. PITTSBURG OFFICE, Carnegie Building. EUROPEAN OFFICE, 39 Victoria Street, London, S. W. CLEVELAND, OHIO, U. S. A. CRANES OF ALL TYPES,

Electric, Steam and Hand Power.

Send for Catalogue.

ALL KINDS

ıl-

HOISTS

FOR ALL PURPOSES.

EDWIN HARRINGTON, SON & CO.,

PHILADELPHIA, PA., U. S. A.



Pneumatic Self=Traveling Trolleys.

Adapted to any service where weights and substance in bulk is to be handled, doing away with hand labor. The only overhead automatous device having perfect mobility, traversing any distance, turning corners, switching from one track to others, running on to transfer tables, covering any desired rectangular space, quick acting, economical to operate and maintain, free from fire risk and suitable for the mercantile business as well as manufacturing.

Write for Information and Prices.

PNEUMATIC CRANE CO.,

Builders of Overhead Traveling Cranes and Air Hoists, 26th and Liberty Sts., PITTSBURG, PA

A Perfect Gasket

of any size or shape can be quickly made, without waste, by using Excelsior Gasket Tubing. Four sizes of tubing equip you for making any size or kind of a joint.

EXCELSION TRADE MARK TUBING CO.

Manufactured by

Send for

Sample and Circular.

BOSTON BELTING CO.

James Bennett Forsyth,

Mfg. Agt. and Gen. Mgr.

High Grade Rubber Belting, Hose, Packings, Valves, Tubing.

NEW YORK.

BUFFALO.

CHICAGO

ST. LOUIS.

BOSTON

······

CLUTCH "Takes Hold" and "Lets Go"

just when you want it to and will keep doing so for years is a very useful article in any kind of a factory.

FRISBIE FRICTION CLUTCHES

operate just that way. That fact has been proved by years of successful service on all kinds of machinery.

PLEASE ASK US TO TELL YOU ALL ABOUT THEM

The Eastern Machinery Co.,
146 ASHMUN ST., - NEW HAVEN, CONN.



For Water and Hydraulics.



Made Both

Straight and Spiral.

HYDRAULIC RAINBOW CORE PACKING.

Sole manufacturers of the celebrated Rainbow Packing, Peerless Piston and Valve Rod Packing, Eclipse Sectional Rainbow Gaskets, Hercules Combination, etc.

Largest manufacturers in the world of fine mechanical Rubber Goods.

Copyrighted and Manufactured Exclusively by

THE PEERLESS RUBBER MANUFACTURING CO., - 16 Warren Street, New York.

16-24 Woodward Avenue, Detroit, Aich.

17-19 Beale Street, and 18-24 Main Street, San Francisco, California.

The All-Wrought Steel Split Pulley.

Patented and Patents Pending in U. S. Patented Throughout the World





INTERCHANGEABLE METAL BUSHINGS TO FIT ALL SIZES SHAFTING.

Sold by the best Hardware and Supply Houses all over the World,

SEND FOR CATALOGUE AND PRICES.



EUROPEAN AGENT.

Bhas. G. Eckstein.

16 Spandauerstr.,

Berlin, Germany.

"Hook 'Er to the Biler."

If we had written—Attach it to the Boiler—you would never have read it, because that is the way most people would say it. But old Tom, the cupola tender, in explaining how the Ridgway Elevator works so beautifully, takes his old black pipe from his mouth and says: "We 'ook 'er right to the biler." Which is both exact and graphic, and you kind a like the shoppy flavor of the saying of it.

This is a wonderful elevator, and if we can only manage to get people to know

there is such an elevator to be had we are sure to sell them.

Just think of it—we give the most perfect of hydraulic elevators, it don't require any pump, saves all the cost and bother of a pump and uses, by actual test, 60 per cent, less steam than a pump, and the whole elevator, all complete, don't cost much if any more than a pump.

No wonder people who use elevators get them, if they know about them.

They are finding out about them now in England and we are making for there

now.

People who have the ordinary elevators are continually writing us if we can add our Patent Steam Hydraulic Attachment. Can't always do it. Save yourself this trouble by coming to us first.

Oil-Governed Air Hoists.

Never was such a good air hoist. Why?

Because it don't jerk.

Because it is safe.

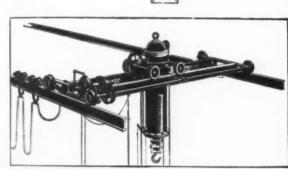
Because it don't hurt folks.

Because it is gentle.

We want people to get one, hang it up and try it. The machine will speak its own piece!

We make these hoists and kindred machines up to 50 tons and greater capacity.

Our Crane More Popular Than Ever.



CRAIG RIDGWAY & SON CO.,

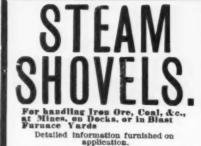
Buhl Malleable Co., Detroit, Mich.

N. Y. Warehouse and Office, 37 WARREN ST. Alder & Boyd,

Coatesville, Pa.







THE THEW AUTOMATIC SHOVEL CO., LORAIN, OHIO, U. S. A.

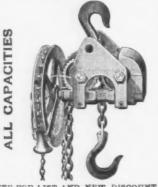


lliam Sellers 46, Incorp.

Philadelphia, Pa.

NOTE.—This small picture shows a portion of very powerful 24 inch Plate Bending Rolls, 22 feet 6 inches between housings. The top and bottom rolls are 24 inches diameter; side or bending rolls 20 inches diameter. These rolls are driven by independent engines, but may be arranged to drive by electric motor. The pinching rolls will take in plates of 2 inches or less in thickness.

BOX'S DOUBLE CHAIN HOISTS SCREW



WRITE FOR LIST AND NEW DISCOUNT SHEET ALFRED BOX & CO.,

Frent and Poplar Sts., PHILADELPHIA. Holsts and Trolleys, Hand or Electric, for Travel on Lower Flanges of I Beams.

With Patent Automatic Friction Brake.

1000 to 20,000 lbs. Capacity.

Portable Beam Punches. Hand Punches and Shears Combined.

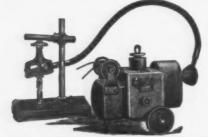
Scroll and Screw Punches. Sheet Iron Shears.

Clamp Drills.

ANGING TO 20,000

CHAS. G. ECKSTEIN. 249 Centre St., New York.

ESTABLISHED 1875 Stow Flexible Shaft and Multi-Speed Motor.



and water proof. For Portable Reaming, Emery Grinding, etc. ogue and prices. Drilling, Tapping Write for Catalo

STOW MFG. CO., Binghamton, N. T.
General European Agents, SELIG, SONNENTHAL &
CO., SS Queen Viotoria St., London, England.

ELECTRIC AND HAND TRAVELING CRANES.



PAWLING & HARNISCHFEGER,
Chicago Office, G. P. NICHOLS & BRO., Managers,
1325 Monadnock Bldg.
161 Clinton Street,
Milwaukee, W 161 Clinton Street, Milwaukee, Wis.

Pittsburgn Office, W. P. LINDSLEY, Mgr., Fidelity Building. New York Office, A. A. DeBONNEVILLE, Mgr., Bowling Green Bldg.



ORTHERN ENGINEERING WORKS

Nº 2 CHENE ST. DETROIT, MICHIGAN,

CLEVELAND O

READING CRANE & HOIST WORKS

READING, PA.

HAND POWER TRAVELING CRANES in all sizes and styles. SPUR GEARED CHAIN BLOCKS with Patent Automatic Friction Brake from 1/2 ton to 20 tons capacity.

Overhead Tracks, Trolleys, Switches, Etc.

STANDARD EYE BOLTS.

DROP FORGED FROM STEEL WITHOUT WELD.



Keystone Drop Forge Works, PHILADELPHIA PA.



Some Don'ts

DON'T Mount a wheel before you have assured yourself that it is sound—this is easily done by tapping it lightly with a hammer.

DON'T Use flanges of less than one-third the diameter of the wheel.

DON'T Hack your wheels-if you haven't an Emery Wheel Dresser we will furnish you with one.

DON'T Allow wheels to remain out of true.

The Sterling Emery Wheel Mfg. Co., TIFFIN, o.

New York, 45 Vesey St. Chicago, 47-49 S. Canal St. Boston, 68-70 Pearl St.

San Francisco, 21-23 Fremont St.



Freight and Passenger_

HAND and POWER

ELEVATORS

STEEL ROLLER BEARINGS, EASY TO SET IN PLACE, RUN EASY. VARIETY MACHINE CO., Warsaw, N. Y.

NEW YORK AGENTS: WHITE, VAN GLAHN & CO., 15-16-17 Chatham Square, 49 East 42d Street, New York

EMERY WHEELS Tool

L. BEST, 45 Vesey St., NEW YORK. No. 2.

Cable Address, ABRASIVE.

HIGHEST AWARD

AT THE

National Export Exposition, Philadelphia, 1899.





AWARDED TO

The Morse Electric Elevator.

Morse, Williams and Co., Makers,

Union Tool Grinder,

All gear cut from solid steel.

Heavy construction throughout.

Large bearings.

Steel shaft.

Furnished with two high grade emery wheels.

Used by plumbers, store dealers, miners, metal workers, bicycle men, etc.

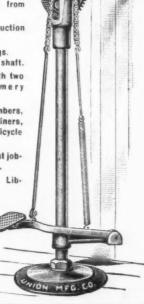
Sold by the best jobbers everywhere.

List \$10.00. Liberal discount.

UNION

MFG, CO., Manufacturers of full line of foot power grindng tools,

20 Breckenridge St. Buffalo,



Engineer's Handy-Book. Fifteenth edition, revised and enlarged, by Edwin R. Keller and Clayton W. Pike. Containing facts, formulee, tables and questions on power its generation, transmission and measurement; heat, fuel and steam; the steam boiler and accessories; steam engines and their parts; the steam engine indicator; gas and gasoline engines; materials, their properties and strength; with a discussion of the fundamental experiments in electricity, and an explanation of dynamos, motors, batteries, switchboards, telephones, bells, annunciators, alarms, etc., and also rules for calculating sizes of wires. By STRIPHER ROPER. Hisstrated. 841 pages, leather, pocketbook.

For sale by David Williams Co., 232 William St., M.Y

A Winner

Unequaled for

Durability and Speed.

A very handy machine for BICYCLE R-PAIR SHOPS, MACHINE SHOPS, BLACK-SMITH SHOPS, MILLS, F-C-TORIES, and any work that requires a machine for grinding DRILLS, TOOLS OF KNIVAS. 2,000 revolutions, or 3,500 ft. a minute easily attained.

Size of Emery Wheel x 1 in. any Grade of Emery. Balance Wheel, 10 x 16 in. Pulley, 2 x 16 in. Mandrel, 16 in.

Oil Stone or Grind Stone
Wheel supplied with
Machine.
Height of Machine when
set up, 4 feet.

Reisch's Foot Power

Emery Wheel, Knife Sharpener and Tool Grinder

Price, \$6.00.
Sent on ten days' trial to any responsible party.
Quotations given on Solid Emery Wheels, Oil Stones and Grindstone Wheels.
MANUFACTURED BY

The Buffalo Emery Wheel Co.,

50 Lock St., Buffalo, N. Y., U. S. A.



NORTON

Our Best Salesman

IS ...

Quality...

EMERY

GOLD

HIGHEST AWARD

1900

REASONS IN OUR COMPLETE ILLUSTRATED CATALOGUE.

Chicago Store, 25 So. Canal St.

NORTON EMERY WHEEL CO., Worcester, Mass.

HIGH-GRADE

Buffing and Polishing Wheels.

OUR CATALOG TELLS THE STORY WRITE FOR IT.

MAKERS OF THE CELEBRATED

"Compress" Polishing Wheel

DIVINE BROTHERS CO., Utica, N. Y., U.S.A.



Bridgeport Safety Emery Wheel Co.,

BRIDGEPORT, CONN., U. S. A.

Patentees and manufacturers of Emery Wheele
and Emery Wheel Machinery. Send for prices.

RAWHIDE GEARS.

MANUFACTURED BY

Horsburgh & Scott,





Complete

Catalogue

on

Application.

DIAMOND TOOLS

Invaluable for changing the shape of faces of Emery,
Corundum or
Carborundum
Wheels.

their use any desired shape may be obtained.

Send for Descriptive Catalogue and Price-List.

THOS. L. DICKINSON,
AB Vesey St., - New York City.

Hardening and Tempering

To be done quickly, with perfect Uniformity and Excellence,

Must be done in Gas Furnaces.
RESULTS UNEQUALED.

American Gas Furnace Co.,

23 John Street, New York.

Chas. Churchill & Co., London and Birmingham Schuchardt & Schutte, Berlir and Vienna Hermann-Glaenzer & Co., Paris.

AMERICAN EMERY WHEELS



are more carefully made and graded better than other emery wheels. They will do finer work and more of it; and they are far safer to use. These are a few of their good points. There are others. Our catalogue tells about them. Send for it.



AMERICAN EMERY WHEEL WORKS, Providence, R. I.

ROLL GRINDERS

Tell some interesting facts about Carborundum.—For instance:

"We find that emery wheels will grind about 65 rolls before becoming useless. Carborundum Wheels grind an average of 220 rolls each.'



is cheapest, even though it does cost almost twice as much. THE CARBORUNDUM COMPANY, Niagara Falls, N. Y.

Porous **EMERY**

may be called self-sharpening files. Vitrified Emery Wheels are porous and cut as free when nearly used up as when first put in use.

SEND FOR CATALOG.

VITRIFIED EMERY WHEEL CO., Westfield, Mass., U. S. A.



READY FOR IMMEDIATE SHIPMENT.

AND Polishing

Machinery.

AND POLISHING

Machinery.

10-INCH FOUR WHEEL GRINDER HEAD

BUILDERS IRON FOUNDRY.

TOURDERS AND MACRIFISTS, - - PROVIDENCE, R. I.



If you grind saws, thin cutters, thrust washers, etc., send for our Disc Crinder Catalogue.

UNIVERSAL MACHINE CO., Providence, R. I. U. S. A.

DeFRIES & CO., Agents for Germany, Austria and Russia.



3PRINGFIELD MFG. CO., Bridgeport, Ct.

For sale by David Williams Ge., 232 William St., N.Y.



"He who misses the BEST is a loser."



DON'T BUY MILLING CUTTERS



Until you have our quotation for "STANDARD"



THE STANDARD TOOL CO. Cleveland,



Your Sockets are ruined by the drills slipping in them-aren't they? Our Grip Sockets stop all that. You have from five to fifty drills in your shop that you can't use because the tangs are twisted off. One of our Grip Sockets will

enable you to use them again, and the drills are

worth several Sockets-try one.

NEW YORK STORE, 99 Reads St. CLEVELAND TWIST DRILL CO., Cleveland, Ohio, FENWICK FRERES & CO., 21 Rue Martel, Paris. CLEVELAND TWIST DRILL CO., U. S. A.

This will interest you if you ream Cored Holes.



FOUR CROOVE CHUCKING REAMER.

PROCESS TWIST DRILL CO.,

CATALOGUE FREE.

Taunton, Mass., U. S. A.

"THE BEST IS



DRILL GRINDERS, I HE

Made by THE WASHBURN SHOPS of the

WORCESTER POLYTECHNIC INSTITUTE. WORCESTER, MASS.

THE LARGEST MANUFACTURERS OF DRILL GRINDERS IN THE UNITED STATES.



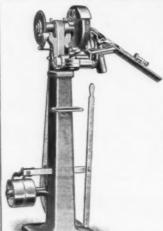
GRADE WOOD

Prices, full particulars and large new illustrated catalog

Fay Swing Saw, free on application.

J. A. Fay & Egan Co.
Nos. 179 to 199 W. Front St.,

CINCINNATI, O.



The New American Drill Grinder.

This machine has a new design of head with the Double Bearings and the Belt Pulley between them.

Both of these are taper bearings, which give perfect take-up for all wear in all directions.

This improvement, together with the many other special features, places this machine far ahead of all others for this work, and the only time you will ever doubt this is before you have a machine.

SEND FOR CIRCULARS.

L. S. HEALD & SON,

Box 557, BARRE, MASS.

Sold by Chas. Churchilli & Co., London, Birmingham, Mancheste and Glasgow. L M. Rumsey & Co., St. Louis, Mo & Co., Boston and Chicago New York City:—The Garvin Wa Civine Co; Manning, Maxwell & Moore, The Jarvin Machine Co Berlin, Germany and Austria

WOOD WORKING MACHINERY

::: FOR :::

CAR BUILDING.

Established WOODS. In 1854.

S. A. WOODS MACHINE CO.,

EARL ST., SO. BOSTON, MASS., U. S. A.

No. 6 UNIVERSAL GRINDING MACHINE

20 INCH SWING. 144 INCH BETWEEN CENTERS.



WE MAKE FIVE OTHER SIZES.

LANDIS TOOL CO., Waynesboro, Pa.

MORSE TWIST DRILL AND MACHINE CO.,

NEW BEDFORD, MASS., U. S. A.

Having purchased of M. L. Andrew, of incinnati, Ohio, his patents for Sockets or Chucks we can furnish Drills or other ools to fit them.

The accompanying cuts represent the tyle of socket and shank of drill used in his socket. The drills are held in place by the key in the socket. As the groove stends the entire length of the shank mere is no difficulty in placing the shank in the proper position.

There are obvious advantages to be lained by the use of this style of socket. Further particulars furnished on application.

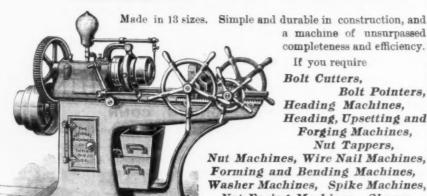
No. 102%

Drills with Grooved Shanks to Fit Andrew's Sockets.



ANDREW'S PATENT

NATIONAL SINGLE Bolt Cutter



a machine of unsurpassed completeness and efficiency.

If you require

Bolt Cutters,

Bolt Pointers, Heading Machines, Heading, Upsetting and Forging Machines, Nut Tappers,

Nut Machines, Wire Nail Machines, Forming and Bending Machines, Washer Machines, Spike Machines, Nut Facing Machines, Shears,

Send for Catalogue "A."

THE NATIONAL MACHINERY CO.,

Tiffin, Ohio, U. S. A.

THREADERS **HEADERS** and PERS WRITE TO US FOR

ANYTHING YOU WANT IN THIS LINE.

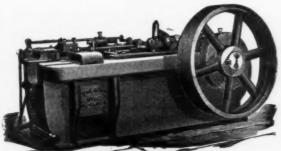
EUROPEAN AGENTS: Schuchardt & Schutte, Berlin and Vienna. Adphe. Janssens, Paria

W. Burton, Griffiths &

The Acme Machinery Co., CLEVELAND. O ... U. S. A.

Cor. St. Clair and Hamilton Sts.

THE AJAX MANUFACTURING COMPANY, CLEVELAND, O., U. S. A.



Sole Manufacturers of

The Blakeslee Improved

Bolt Headers. Rivet Headers, Upsetting Machines, General Forging Machines. Hot Pressed Nut Machines, Bulldozing and Bending Machines, Forming Machines and Special Nut and Bolt Machinery.

Tangye's Hydraulic Jack.

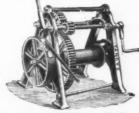
Sizes from 3 tons to 200 tons.

Works horizontal or perpendicular.

The key lowers and stops it at any point.

Iron Hoisting Crabs.

Write for Prices.



JOS. F. McCOY CO., 26 WARREN STREET, NEW YORK.

***** The Chicago Flexible Shaft Co.,



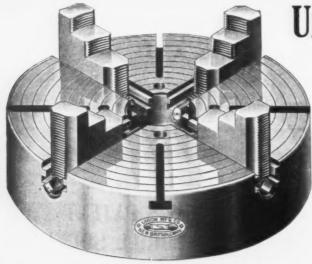
Manufacturers of proved Process, in-iuring great strength and in-creased durability

Warranted the
Best.
Superior shafts
for all purposes.
Also special and
standard Tools
and Appliances.

We now make Wire Scratch Brushes for use with the Flexible Shaft that are



CHICAGO FLEXIBLE SHAFT CO., Nos. 158-160 Huron St., - CHICAGO, ILL. European Agents Niles Tool Works Co., London, Eng.



Union Independent Chuck, No. 18.

MADE IN THE FOLLOWING SIZES:

4, 6, 8 9, 10, 12, 14, 15, 16, 18, 20, 22, 24, 26, 28 30, 32, 34, 36, 38, 40, 42 inches.

A well made chuck of great strength, "T" slot com. mencing with 10 in. size and up.

UNION MFG. CO.,

Manufacturers of a full line of Independent, Com. bination Universal Geared, Scroll and Valve Chucks, Face Plate Jaws and Drill Chucks.

Factory, New Britain, Conn.

Warehouse, 103 Chambers St., New York.

CHAMPION INDEPENDENT



An entirely new line of small Chucks, provided with 3 or 4 independent reversible steel jaws. The best Chuck in the market for foot lathes. Ask your dealer for them or write to us.

THE D. E. WHITON MACHINE CO.,

NEW LONDON, CONN.

European Agents, SELIG SONNENTHAL & CO., 85 Queen Victoria St., London.

Our catalogue is free and will give full information.



The Sweetland Combination Chuck,

with patent reversible jaws, is the best all around chuck made. We also make the Sweetland Geared Scroll ting Die Heads. Can Chuck, the only one with Solid Reversible Jaws. Will furnish the regular one or two sets of jaws if required.

A full line of Combination, Independent, Universal and head will take the place of four of other send For CIRCU-Scroll Chucks, Face Plate Jaws, etc.

We have the latest and best thing in Self-Opening and Adjustable Screw Cutuse either right or left-hand dies. One



THE HOGGSON & PETTIS MFG. CO., New Haven, Conn., U. S. A.

We wish to hear from all users of

Machine Screw Taps TAPS and

Hand Taps.

Send for Catalogue of full line of

WINTER BROTHERS, WRENTHAM, MASS., U.S. A.

New Adjustable Round Die.



New York Representative, E. B. HIGGINS & CO., 20 Reade 8

Cushman

We manufacture Ten distinct styles of Lathe Chucks, Four styles of Drill Chucks, Centering Chucks, Face Plate Jaws and Chucks for special service.

SEND FOR NEW CATALOGUE AND DISCOUNT SHEET.

THE CUSHMAN CHUCK CO., Hartford, Conn., U. S. A.

SKINNER CHUCKS.



For LATHES, DRILLS and PLANERS

Skinner Chuck Works, New Britain, Conn



ACCURATELY GROUND are the beveled self hardening steel blade used in The Hugh Hill Cutting Off Too Ground narrower at the rear end so as to give proper clearance the entire length of blade. They never bind and break. Call for The Hugh Hill and get the best

HILL TOOL CO., Anderson, Indiana.

G. DIECHMANN & SOHN, Berlin and Vienna.

little Giant.

Send for Catalog.

0,

n-

CE.

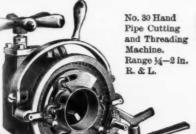


Have Knurled Handles.



SCREW PLATES

WELLS BROS. & CO., Greenfield, Mass.



Curtis & Curtis Co.

No. 15 Garden St., BRIDGEPORT, CONN.

FORBES' PATENT DIE STOCK. FOR HAND OR POWER.

OUR HAND MACHINES are the only portable hand machines in the market with which one man can cut off and thread large pipe up to 12 inches diameter without assistance. Two and three-inch pipe is threaded by using only one hand on the crank, thus saving much time and hard labor.

OUR POWER MACHINES occupy less floor space require less power to run them, are more simple of construction, and are far cheaper than any other make of machine of the same range in the market.



RATCHET DRILLS, RATCHET DIE STOCKS, MALLEABLE IRON PIPE VISES.

SEND FOR ILLUSTRATED CATALOGUE.

SALES RECORD shows that our "Users' List" of Peerless and Duplex Pipe Threading and Cutting Machines is constantly increasing through the addition of new customers' names. It does not stop there by any means! Duplicate orders, or those for larger machines, from customers already of record are a very noticeable feature of our sales. The catalogue we issue is interesting and will be gladly mailed without charge.

BIGNALL & KEELER MFG. CO., Edwardsville, Ills., U. S. A.
Agents: Chas. Churchill & Co., Ltd. London. DeFries & Co., Actiengesellschaft. Düsseldorf. Aktiebolaget Verktygsmaskiner, Stockholm.

HORTON

has led the procession, and served as a model and standard of comparison for nearly

50 YEARS.

In order to do this it must possess

MERIT.

The Horton Chuck Co.,

Windsor Locks, Conn., U. S. A.

Schuchardt & Schutte. Berlin, Vienna, Cologne, Stockholm and New York. Freres & Co., Paris, France. Van Hietschoten & Houwens, Botterdam.



THE "MODEL" DRILL

Powerful Grip,

Perfectly True. Send for Catalogue.

DOEBLER MFG. CO.

Middletown, Conn.

ITS ONLY PURPOSE TO HOLD DRILLS SO IT IS IMPOSSIBLE FOR THEM TO SLIP

How well it has qualified is borne out by every user. Its construction is such that a little dog floats on top of the jaws, holding the flat end of the drill so the drill cannot slip.

SEE OUR BOOKLET FOR FULLER DESCRIPTION.

THE PRATT CHUCK COMPANY, Frankfort, N. Y.



THE IDEAL REVERSING TAP HOLDER.

Complete in itself-Very sensitive, and



IDEAL MACHINE WORKS, - Hartford, Conn. SEND FOR CIRCULAR.

DON'T WASTE GOOD MONEY AND TIME

trying to use those antiquated solid dies on your screw machines or turret lathes when you can save 50% by using our improved Self-Opening and Adjustable Screw Cutting Die Heads, which are way up to oate.

Send for our Catalogue I A.

GEOMETRIC DRILL CO., Westville, Conn.



Lathe and Planer Tools The New Kind



Using inserted SELF-HARDEN-ING Steel Cutters. Saves Forging, Dressing, Tempering, 90% Tool Steel. 70% Grinding. New Tools New Catalog. New Prices.

KEEP POSTED. ARMSTRONG BROS. TOOL CO., Chicago, III.

Is the BEST too good for you?



If not, when in want of TAPS or DIES try

CARD'S.

S. W. CARD MFG. CO., Mansfield Mass., U. S. A.



Reliable **Torches**

For Oil or Gasoline

For use in Factories, Foundries, Machine Shops, Rolling Mills, Blacksmith Shops, Warehouses, &c. They make a strong white light, are free from smoke and are not affected by wind or rain.

Can be run at an expense of about one-half cent to one cent per hour, burning a bright, steady light, which is ten times

greater than light of an ordinary

Write us for prices.

MANUFACTURED BY

THE SCHNEIDER & TRENKAMP CO., Chicago, Ills., and Cleveland, Ohio.

THRUST COLLAR BEARINGS.





OUR T-C

The Ball Bearing Co.,

BOSTON, MASS.



PITTSBURGH MFG. CO.,

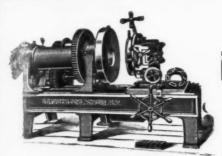


BUILDERS OF Crosgrove's Patent Straightening, Bending and Punching Machines.

BOLTS, NUTS, RIVETS, CASTINGS, ETC.

Pittsburgh, Pa.

DRILLS, 1 to 6 SPINDLES; D'AMOUR & LITTLEDAIF MCH. CO. 2



D. SAUNDERS' SONS,

For Pipe-Mill and Steam Fitters' Use. Tapping Machines for Steam Fitting, Also Steam and Gas Fitters' Hand Toels.

SEND FOR CIRCULARS.

No. 25 Atherton Street,

YONKERS, N.Y.



Punches and Shears

Hydraulic ≺

PRESSES. PUMPS. ACCUMULATORS, JACKS, ETC.

SEND FOR CATALOGUE E.

The Watson-Stillman Co., 204-210 E. 43d ST., NEW YORK.

OHICAGO BRANCH: 453 Rookery.



CHAS. G. ECKSTEIN Spanfauer Str., 16-17, Berlin, C., Germany.

RICHARD DUDGEON, No. 24 Columbia St., New York. Maker and Patentee of the Improved

Hydraulic Jacks

Punches.

Roller Tube Expanders, and Direct Acting Steam Hammers.



Communication by letter will receive prompt attention.

Machinists' Screw Plates.

SPECIAL

until Jn'y Ist, \$3.75

Cash with order-we will send to any address in the United States, express paid, this set consisting of seven sizes of taps and dies together with stock and tap wrench, complete in case.

THE E. F. REECE CO., 30 Wells St., Greenfield, Mass.

SEND FOR CATALOGUE "D."

1901, for . . .

Nº A1 FOR MACHINE SCREWS

AS A DRIVING FORCE

For Flexible Shafts, Portable Drills, Portable Emery Grinders, Reamers and Taps, use our Portable

COMPRESSED AIR MOTOR Write us for Catalogue 4.

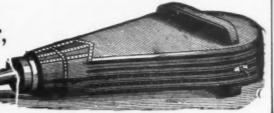
STOW FLEXIBLE S HAFT CO.,

26th and Callowhill Sts., Philadelphia. FREDERIC SCHOFF, Proprietor.

GEO. M. SCOTT.

Bellows Manufacturer. Johnson Street.

Ger. 224 St., CHICAGO, ILL



DEAD-STROKE POWER HAMMERS.

IMPROVED. NSTRUCTION

The 15 an Filemakers' Send for circ

DIENELT & EISENHARDT, 1310 Howard St., Philadelphia.

MANUFG. CO. TOLEDO, O.



THREAD'G MACHR'Y. SEND FOR

EUROPEAN OFFICE: The Fairbanks Co., 16 Great Eastern St., Lon-don, E. C., England.



The Engineer's Friend. Containing information about the locomotive, steam engine, with questions and answers for engineers and other valuable tables, for engineers, firemen, etc. By J. PERRYCOOK. Illustrated 88 pages, paper....50c,

sale by David Williams Co., 232 William St., N Y.

NAME PLATES

For MACHINERY.

We make name plates for some of the largest makers of machinery in the U. S. and we would be pleased to send you sample and quote price.

No Plate Too Large or Too Small.

MURDOCK PARLOR GRATE CO., 154 Boylston St., Boston, Mass., U. S. A.

ATANTANTA

Think of putting in a Drill Press until you have first examined the many prac tical features of

"The Cincinnati,"

it's simply perfection, at least we have the word of hundreds of users for it.

If you want to be up on " Drillology get our printed matter.



New Green River SHOEING VISE

and

BOLT HEADER

No. 3.

Send for Descriptive Circular.

Complete for Shoeing and Bolt-heading, \$12:50 For Shoeing only, without Bolt-h'ding attch.. 11.50

Wiley & Russell Manfg, Co.,

GREENFIELD, MASS.



JARECKI MFG. CO, -- ERIE, PA.

PIPE THREADING AND CUTTING TOOLS OF ALL DESCRIPTIONS.



We can furnish Bolt Threading Attachment for this Machine.

Malleable and Cast Iron Fittings. Brass and Iron Body Valves and Cocks. Pipe Threading Tools.



MULTIPLE SPINDLE Sensitive Drill.



2, 3, 4 and 6 Spindles.

SEND FOR CIRCULAR.

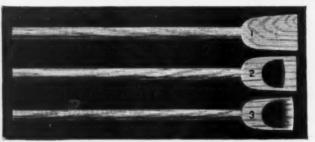
HILL, CLARKE & CO.,

Boston and Chicago. *********************** ESTABLISHED 1850.

DEFIANCE MACHINE WORKS, INVENTORS AND BUILDERS OF

Defiance, O.

AUTOMATIC WOOD WORKING MACHINERY.



FOR MAKING

"D"

Shovel Handles, Fork, Rake, Hoe, and Broom Handles, Hubs, Spokes, Wheels, Wagons, Carriages, Rims, Shafts, Poles, Neck-Yokes, Single-Trees, and Barrel Hoops.

NEW HAVEN MANUFACTURING CO.



Manufacturers of

Lathes, Planers, Drills. Slotters, Etc.

Automatic

Power Presses.

THE AUTOMATIC MACHINE CO., Bridgeport, Conn.



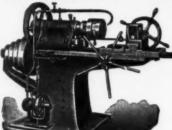
For Boring Cylinders

or other large holes of 6 or 7 inches diameter We use a special driving core fitted with planetary gearing, which more than triples the power of the machine. An automatic arrangement for feeding the head length wise on the arm is also new book, "Drilling Machinery and Other Toois."

The Bickford Drill and Tool Co. CINCINNATI, OHIO, U. S. A.

Foreign Agenta: Schuchardt & Schutte, Berlin, Vienna, Cologne, Brussela, Stockholm, St. Peters-burg. Charles Churchill & Co., Ltd., London, Bir-mingham, Manchester and Glasgow. Adolphe Jans-sens, Paris and Brussels. F. W. Horne, Yokohama, Japan. Julio Collignon & Co., Guadalajara, Mex.

The Adams Automatic **Bolt Threaders**,



Single, Double and Triple Heads. Sizes, Bicycle Spokes to 4-inch Rods.

The simplest, strongest and most reliable head made. Heads furnished fitted for any other make of machine. Tappers, Bolt Pointers, Nut Facers, etc.

Catalogues and Prices Furnished on Application.

The DETRICK & HARVEY MACHINE CO., Baltimore, Md.

Manufacturers of THE OPEN SIDE PLANER.

IF you buy ten (10) tons of wire cut to lengths per year, you will pay for a Wire Straightening and Cutting Machine. Cut your own and pay for a machine in nine (9) days.

THE F. B. SHUSTER CO.,

Formerly JOHN ADT & SON,

- - - NEW HAVEN, CONN. MILL STREET, -

ATHE

ISRAEL H. JOHNSON, JR., & CO., - PHILADELPHIA

Punches and Shears. Send for Circular

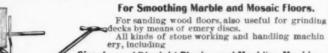
W. C. YOUNG MFG. CO...

17 HERMON ST., Worcester, Mass, U.S.A.

Telegraph Address; Young Worcester,

Western Union Code.

ELECTRIC SURFACING MACHINE



Circular and Straight Planing and Moulding Machines

Gang Saws of every capacity, Rubbing Beds from 4 to eet in diameter. Tile and Mosaic Vachinery, Polishing chines for Marble and Granite. Turning Lathes for Stones TRAVELING CRANES FOR ALL PURPOSES.

SEND FOR CATALOG" F. R. PATCH MFG. CO., Rutiand, Vt., U. S. A.

EBERHARDT'S PATENT Radial Duplex Gang Cutters.





2 to 10 teeth finished at once.

LABOR SAVED PATIENCE MONEY GOULD & EBERHARDT, - Newark, N.J.

Manning, Maxwell & Moore, New York,
U. Baird Mach'y Co., Pittsburgh, Pa.
Marshall & Huschart Mchy. Co., Chgo., Clevd., Cla.
Schuchard & Schutte, Berlin, Cologne, Vleana.
Brussels, Stockholm, St. Petersburg.
John Lang & Son, Johnstone, Scotland, and England
Roux, Freres & Co., Parls, France.
Sellg, Sonnenthal & Co., Loadon, Bagland.
White, Child & Beney, Shapers and Drill Presses.

TO DRILL HOLES.

\$6 to \$85.

d sizes "Advance" Drills, Nes. 12, 16 and 14. Hand or Power. 4 sizes Silver's Drills, Nos. 116,



1, 2 and 3, for hand use. 19-inch Power Post Drill. has Cut Searsand is made well. 20 inch Base Drill, Round or Square Base, Lever or Screw Feed.

FOR USE IN

Blacksmith Shops, Wagon Shops, Bicycle Repair Shops, Factories doing Light Work, Etc.

20 in. Power Drill. Square Base, Lever and Screw Feed. \$85.00.

Every Drill Guaranteed. THE SILVER MFG. CO., 317 Broadway, Salem, Ohio.

We manufacture a complete line of

for light work, one or more spindles, hand or automatic feed, of thorough workmanship and strictly up to date.

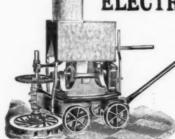
Prompt Delivery on Regular Styles. NEW CATALOGUE ON APPLICATION.

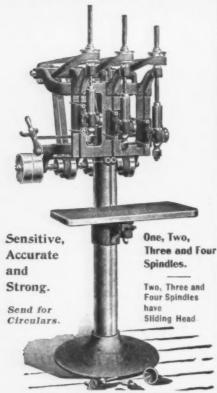
Dwight Slate Machine Co., HARTFORD, CONN.

QUINT'S

MILLING MACHINES AND TAPPING MACHINES.

send for catalogue A. D QUINT, Mfgr. HARTFORD, CONN.





ENLARCED FACILITIES

and EQUIPMENT now enable us to fill orders promptly. Also to offer INVENTORS, ENGINEERS and those having inventions or improvements in machines or appliances our mechanical skill and expersions of the machines of appliances. THE SIGOURNEY TOOL CO., Hartford, Conn., U. S. A.



DRILL PRESSES,
BICYCLE MACHINERY,
PUWEW HACK SAWS,
SAW BLADES AN D
DRILL CHUCKS.
FURNITURE SPRING
TIAL HINERY.

Special Iron, Wire and Wood Working Machinery

Designed and Built to Order.

HOEFER MFG. CO.,

Freeport, Ill , U. S. A.

New 24, 26 and 28 inch



DRILL,

with back gears, self-feed quick return, automatic stop, graduated quill and reverse motion

Sibley & Ware,

South Bend, Ind. 150 E. Tutt 5t.

for making Wood-Screws, Rivets, Stove and Tire Bolts, etc., also Special Machinery to order.

ASA S. COOK CO.,

- - HARTFORD, CONN.

Reece Screw Plates

SIGOURNEY DRILLS. Champion Blower & Forge Co., Lancaster,



Cut Gear Drill.







all sizes and Drills, prices.

Lever and Crank Blowers and Forges, all sizes, styles and prices.

Star Shrinker and Welder in 3 sizes.
Screwplates 1/8 to 1/8 inch in size.
Improved Tire Benders, all sizes.

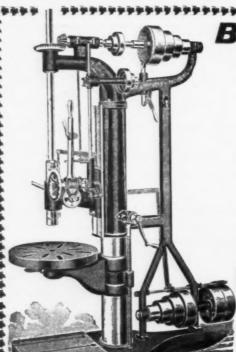
all sizes.

All Standard Champion Blowers and Forges are fitted with the Champion Brass Ball-joint Oscillating Journal Bearings, requiring oiling but once in 6 months.

Write for our 1906 192-page catalogue Illustrating finitargest and most complete line of this class of goods manufactured under one management in the world.

Champion Blower & Forge Co.

Champion Blower & Forge Co. Lancaster, Pa., U.S. A.



******* Barnes' **Upright** Drills.

Ball Bearing Drill.

8 IN. TO 42 IN. SWING.

This cut represents our new 26 in. Sliding Head Drill with back gear, power feed and automatic stop; but this is not all: it's a plain lever feed, also a combined wheel and lever feed. This is our latest tool; it embodies new and original features; is built for business and will do the work of both a stationary and sliding head drill.

SEND FOR CATALOGUE.

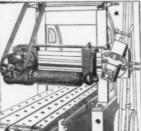
W. F. and John Barnes Co.

Established 1872. 69 RUBY ST., ROCKFORD, ILL.

Sold in England by CHAS, CHURCHILL & Co., London.

Germany by Gustav Diechman & Sonn, Berlin.

ACHINE



any

Iron Planer

Swivels from horizontal vertical. Do not plane surfaces that should be milled, or mill surfaces should planed.

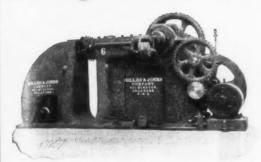
SEND FOR CATALOGUE.

MOLDING



BUTTERFIELD & CO., POCK ISLAND, CAN, I THE ADAMS COMPANY, Dubuque. Iowa. The Adams Company, Dubuque. Iowa.

Heavy Horizontal Punches.



The accompanying cut illustrates a horizontal punch with 60 inches depth of throat, capacity equal to punching 10 x 16 manholes through ¾-inch plate. Machine is also designed for heavy rivet-hole punching, up to 15% in. diameter through 1½ in. plate.

Driving by electric motor, but if preferred, steam engine or pulleys may be substituted.

HILLES & JONES COMPANY,

WILMINGTON,

DELAWARE.



THE PECK DROP PRESS WORKS.

MINER & PECK MFG. CO., Proprietors.

New Haven, Conn., U. S. A.

Manufacturers of

PECK'S DROP PRESS, DROP LIFTER,

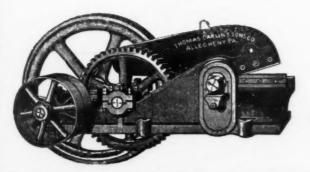
FRICTION DROP HAMMERS.

HAND AND POWER DROPS FOR ALL PURPOSES.



Thomas Carlin's Sons Company,

ALLEGHENY, PA.

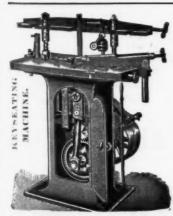


Manufacturers of

Shears,

Grinding Pans and Contractors

Machinery.



W. P. DAVIS MACHINE CO.

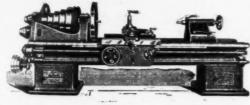
BUILDERS OF FINE

Engine Lathes,
From 10 to 30 Inch swing.
Upright Drills,

From 10 inch Sensitive to 36 inch, with B. G. and P. F.

KEYSEATING and CUTTING-OFF MACHINES.
ROCHESTER, N. Y., U. S. A.

SEND FOR CIRCULARS and PHOTOGRAPHS.



Engine Lathes, 20 in. to 38 in. Gap Lathes, - 20 in. to 38 in. Heavy Turret Lathes, 16in., 18in. & 28 in. Radial Drills, 4 ft. arm. H. C. FISH MACHINE WORKS,

H. C. FISH MACHINE WORKS, WORCESTER, MASS., - U.S.A. THE

Scranton

POWER HAMMERS

possess all the good features other hammers have and many good features other hammers haven't.

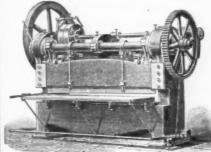
Send for circular No. 25,

THE SCRANTON & CO.,

NEW HAVEN, CONN.

Prentiss Tool & Supply Co., New York.
Marshall & Huschart Machinery Co.,
Chicago, Ill., and Cleveland, O.
Chandler & Farquhar. Boston, Mass.
J. W. Wright & Co., St. Louis, Mo.
Chas. Churchill & Co., Lt., London, Eng.

THIS is an illustration of a Gate Shear, 86 inches wide between the housing, with 6-inch throat depth, having capacity to cut off a 1/2 inch plate—the full width of the machine.



Manufactured by the

LONG & ALLSTATTER CO.,

Hamilton, Ohio, U. S. A.
Write them concerning your needs in the line of
Punching and Shearing Machinery.



MERIDEN, CONN.
Manufacturer of All Descriptions of

The Williams Printing Co.,

PRINTERS AND BINDERS.

ESTIMATES FURNISHED FOR ALL CLASSES OF WORK.

232 to 238 WILLIAM STREET,

NEW YORK



We Manufacture

Blowers, Exhausters, Heaters, Engines Heating, Ven tilating and Drying Apparatus. Mechanical Draft, Dry Kilns, etc. Correspondence solicited.

NEW YORK BLOWER CO Bucyrus, O., U. S. A. New York Office, 39 and 41 Cortlandt St., New York.

PHILADELPHIA MACHINE TOOL CO...

445-449 N. Darien St., PHILADELPHIA, U. S. A.



No. 5 Straight Sided Press with Side

Presses, Shears, &c., Testing Machines, Special Machines.

Beaudry Champion Power Hammer.



BEYOND COMPARISON. Simplest, Best Design. Most Efficient and Durable.

Beaudry & Go., 6 Oliver St. Boston, Ma. U. S. A. SEND FOR CIRCULAR.

WHITCOMB

WHITCOMB MFG. CO., Woreester, Mass.





60 Hours to 3 Hours

represents the difference in time represents the difference in time between tapping holes by hand and using a "Star" Tapping Attachment on a small job by one of our recent customers. A larger job would show even a greater difference—You are not obliged to use the "Star" Tapping Attachment every hour to make it pay. The "Star" Tapping Attachment is suitable for Drilling, Tapping and Stud Setting, Automatic. Fits any Drill Press, No Reverse Belts required. Friction and Positive Drive, Chuck securely holds any drill, tap, etc. securely holds any drill, tap, etc.

No. 1 Taps 1-16 to 5-8 inch. No. 2 Taps 1-16 to 1 inch.

Fully guaranteed. Sent on 30 days trial.
Circular "D" tells all about the "Star" Tapping Attachment.
Shall we send it?

Seneca Falls Mfg Co. 255 Water Street Seneca Falls, N. Y., U. S. A.

SMOOTH-ON GASTINGS.

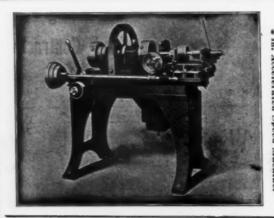
An iron cement for repairing blemishes or blowholes in iron or steel castings When hard this cement has the same color and appearance as cast iron and will withstand a red heat, steam, water Write for catalogue and prices.

SMOOTH-ON MFG. CO.,

549-551 Communipaw Avenue,

JERSEY CITY, N. J.

VREELAND TOMPKINS, Chemist and Manager.



CUTTING-OFF MACHINES.

for Circulars

GERMAN AGENTS: Schuchardt & Schutte, Berlin and Vienna.

ENGLISH AGENTS: Chas. Churchill & Co., Ltd., Londen and Birmingham.

Huribut-Rogers Machine Co., SO. SUDBURY, MASS., U. S. A.

THE STANDARD SCALE AND SUPPLY CO., Limited, Manufacturers, --- PITTSBURGH, PA.



THE RICHARD MANUFACTURING CO.,

Manufacturers of DRAW BENCHES & SPECIAL MACHINER)

For Tubing and Sheet Metal.

-DIES A SPECIALTY.-

BLOOMSBURG,



Steam Fans, Forges,

High and Low Pressure Engines.

Glenwood and Busner Sts., HYDE PARK, MASS. §

NEW YORK OFFICE: 39 Cortlandt St. SEND FOR CINCULARS, New York OFFICE: 39 Cortlandt St.



or

and

ter

in and

Co.,

S. A.

RY

EXETER VENTILATING FANS

will move a larger volume of air with less power required and are lower in price than any Fan in the market. We fully guarantee every one to do all we claim and will send one on trial to any responsible party.

SEND FOR CIRCULAR AND PRICE-LIST.

EXETER MACHINE WORKS, EXETER, N. H.

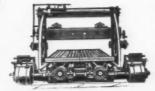
BOSTON, MASS.

STONE CUTTING AND SAWING MACHINERY

J. Gilmour's Patent.

Saw Dogs, Shaftings, Planers, Rubbing Beds, Hoisting Machines, both Steam and Belt Power, Cranes, Diamond Saws, Derricks, Block Cars, Tile Machinery.

J. GILMOUR, MANUFACTURERS' AGENT Bennett Building, Nassau and Pulton Sts., New York. Telephone 4090 Cortlandt.



LATHES, SHAPERS, MONITORS.

THE BARKER & CHARD MACHINE TOOL CO., Cincinnati, O., U.S.A.

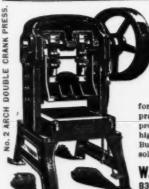


YOU CAN OBTAIN PROMPTLY the latest work on any subject in which you are interested by addressing

DAVID WILLIAMS COMPANY.

PUBLISHERS AND BOOKSELLERS,

232-238 William Street. -'New York



Special and Automatic Machinery and Power Presses

for all purposes, of practically perfect proportions and highest efficiency Built on honor and sold right.

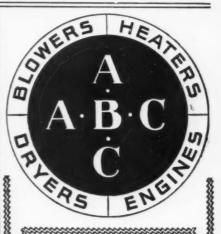
W. H. HIBBARD. 83 Washington St., BROOKLYN. N. Y.

THURSTON Inverted **AILLING** MACHINE.

Bend for circular Thurston Mig. Co. Providence, R. I.







WE manufacture a line of apparatus which, for design, finish and workmanship, is without an equal. We design

Heating, Ventilating, Drying and Mechanical Draft Plants.

Our Engineering Department is at the command of our patrons.

American Blower Company. DETROIT, MICH. NEW YORK. LONDON. CHICAGO.

HAND CLAMP

PLANER CHUCKS.

THE GEO. BURNHAM CO.,

15 HERMON STREET, WORCESTER, MASS.

FOREIGN AGENTS:

C. W. Burton Griffith & Co., London; Josef Schvarez & Co., Budapest; V. Lowener, Copenhagen.

Morton's Portable Planers



Eastern Branch: 126 Liberty Street, New York, N. Y.; Walter H. Foster, Manager. Glasgow Office: 40 St. Enoch Square: James Ritchle, Manager, Schuchardt & Schutte, Berlin, Vienna, Brussels, Stockholm and St. Petersburg. Adphe. Janssens, Parls, France Sellg, Sonnenthal & Co., London, England

PERKINS

The strongest made. Send for Catalogue.

Perkins Machine Co., MASS. U.S.A.

ATHE

18 TO 32 IN. SWING SCHUMACHER & BOYE,

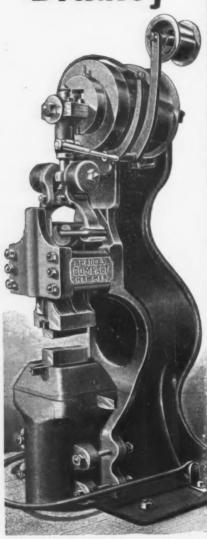
Agents, MANNING, MAXWELL & MOORE, New York, Chicago. Cleveland and Pittaburg

PORTABLE POWER TOOLS

THOS. H. DALLETT & CO., York St. and Sedgley Ave.,
PHILADELPHIA, PA., U. S. A.
SEND FOR OATALOGUE.

CARTER & HAKES, MILLING MACHINES Shops: Winsted, Conn. and Vises. Send for Descriptive circulars.

Bradley

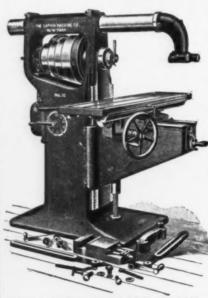


TRADE MARK

Justice Dead Stroke Hammers, Riveting Hammers, Board and Crank Lift Drop Hammers, Eye Bending Machines, Eccentric Rolls for Tapering, Disc Plating, &c. Tire Welding Hammers and Presses, Yeakley Vacuum Hammers.

WILLIAMS, WHITE & CO., Moline Ilis., U. S. A.

FOR IMMEDIATE DELIVERY.



No. 16 BACK GEARED PLAIN MILLING MACHINE.

Size 41 in. x 12% in. x 18 in.

This Machine is designed for heavy milling of any description.

Has extraordinary strength, durability and range of adjustment.

18 changes of feed available.

Graduated dials indicate in thousandths the three movements of tab'e.

Other details in our latest catalogue.

FREE ON REQUEST.

THE GARVIN MACHINE CO.

Spring and Varick Sts., New York.

SALES AGENTS: The Garvin Machine Co., 51 No. 7tl St., Philadelphia, Pa. Manning, Maxwell & Moore, 2 So. Canal St., Chicago, Ill., Deutsche Garvin Maschinen Fabrik. Aktiengesellschaft, 17 Burg Strasse, Berlin, Germany. C. W. Burton, Griffiths & Co., Ludgate Square, Ludgate Hill, London, E. C., England, Mont gomery & Co., 28 Boulevard Magenta, Paris, France.

Guaranteed to produce 25 % more work with less cost for power and repairs than any other make of power hammers in the world. Send for circulars.

THE BRADLEY COMPANY. SYRACUSE, N. Y.

FOREIGN AGENTS:
Schuchardt & Schutte, Berlin, Cologne, Vienna,
Brussels, Stockholm, St. Petersburg.
Buck & Hickman, Whitechapel Road, London.
Montgomery & Co., 23 Boulevard Magenta, Paris.



AUTOMATIC MACHINERY

WIRE and METAL Goods.

Years of successful experience. Send sample for estimates.

THE PARK CITY MFG. CO., Bridgeport, Conn.



BENNETT OILER.

Meets every requirement for a device of this kind. Neat convenient, and easily applied. Made in seven sines, varying by 1-16 in. from 1-4 in. 83.00 per hundred. Patent applied for. Samples Free. Yend for Discount.

Bay State Stamping Co., Worcester, Mass

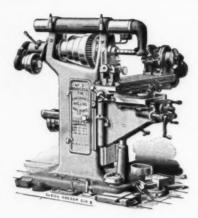
Do you want the best

DRAWING TABLE



made? If so send for illustrated catalogue and prices.

R. H. KIDDHR, RMON ST., - WORCESTER, MASS. 88 HERMON ST.,



E

n.

&c.

or

n.

th,

st-

in

e-

"The Cincinnati" Secured the Gold Medal Award at the Paris Exposition.

HERE'S THE POINT!

TO WORK HARD AND LAST LONG.

"The Cincinnati" Miller is built that way. Parts are heavy enough to stand more than ordinary strains. Then there is an abundant area of sliding surfaces carefully scraped to surface plates, bearings are big with enough metal surrounding to keep them right. Shafts, spindles, clutch gears, etc., all ground, and when necessary, hardened. Accurately cut gears. Every machine thoroughly tested as to alignments. In short, a machine built for hard service, accurate work, and one that will last.

THAT'S WHY "THE CINCINNATI" MILLER SECURED GOLD MEDAL AWARD AT THE PARIS EXPOSITION.

Our Specialty GOOD MILLERS.

We Want You to Have New Catalog.

THE CINCINNATI MILLING MACHINE CO.,

CINCINNATI, OHIO, U. S. A.

EUROPEAN AGENTS—Schuchardt & Schütte, Berlin, Vienna, Brussels, Stockholm, Cologne, St. Petersburg, New York. Adolphe Janssens, Paris. Chas. Churchili & Co., London, Birmingham, Manchester, Glasgow. The Niles Tool Works Co., 39 Victoria St., London

Book Notes

tialvanizing and Tinning, by W. T. Flanders, is now ready for sale. The author has made a specialty of galvanizing and tinning and has been employed to erect numerous plans and to instruct owners to successfully operate them. The treatment of the subject in his work is simple and practical. It is believed that no details of importance have failed to receive careful attention. Beginning with the erection and equipment of plants of large and small capacity the work gives directions for preparing metals and for coating them. Tinning is also treated in a practical manner, a special chapter being given to timing gray from castings. The yellowing gray from castings. to tinning gray iron castings. The vol-ume is neatly bound in gray cloth, con-tains 93 pages and 40 illustrations of tools, appliances and plants.\$2.00

Varnishes.—A technical work recently published in London and translated from the French of Ach. Levache is entitled "The Manufacture of Varnishes, Oil Crushing, Refining and Boiling, and Kindred Industries." The translator is John G. McIntosh who has incorporated a number of criginal recl. incorporated a number of original reci-pes. The work describes the manufacture and chemical and physical properties of spirit and oil varnishes, raw materials, rosins, solvents and coloring principals, drying oils, their construc-tion, properties and applications, refined oils, and the manufacture, employment and testing of various varnishes. 403 pages, cloth.

Gas, Oil and Air Engines.—Bryan Donkins' text-book on gas, oil and air engines is published this year in the third, revised, and enlarged edition. A demand for this and for similar works indicates the increasing interest in the theory, construction and operation of in-ternal combustion motors. 500 pages, Price.....\$7.00

All Books prepaid at published prices.

DAVID WILLIAMS COMPANY.

232-238 WILLIAM ST., NEW YORK.

CHAS. LEFFLER & CO..

49-61 Clymer St., Brooklyn, N.Y. PRESSES, DIES and TOOLS

Manufacture of Sheet Metal and Paper Goods.

Special Machinery, Experimental Machinery Metal-Edge Paper Box Machinery, Etc.

GENERAL MACHINERY

For Petroleum Cans, Powder Cans, Fruit Cans

Sardine Boxes, etc., etc., etc. Telephone, 753 W'msburgh.

Purchase and Pearl Sts., Boston, Mass

HEADQUARTERS FOR GEARS.

Bevel Gears with Planed Teeth. Job Gear Cutting of all kinds. Spur. Bevel, Spiral, Eatchet, Worm Rack, Eliptic, Index Plates, &c. Very small or large Send for Gear Catalogue H 3200 sizes of Gears.

WIRE AND ROD CUTTER.

No 1 Cuts 1-8, 3-16, 1-4, 5-16, 3-8 in. No. 2 " 5-16, 3-8, 7-16, 1/4 in. No. 2 can be made to cut Flat Bars up to 1 x 1-4. SEND FOR PRICE

C. S. MERSICK & CO.,

New Haven, Conn.
We have the best Tinners' and
Plumbers' Estimate Book,
mailed for \$1.25.



A NEW WATCHMAN'S REGISTER, A NEW EMPLOYE'S REGISTER. TWO IN ONE.



No wires, dials, ribbons, pneumatic tubes nor batteries Nimple, durable, inexpensive ard absolutely tamper-proof. Adapted to all situations—shops, yards, tun-nels, bridges, track repairs, &c.

A Register as good as any at one-third the price. Fend for Circular. CLEVELAND REGISTER CO., Oberlin, Ohio. ------



Tools

FOR

Sheet Metal Workers.

Tinners' Tools and Machines, Presses and Dies. Squaring and Rotary Shears, Rolls, Punches. MADE BY

Niagara Machine and Tool Works. Catal. I sent free. BUFFALO, N. Y.

Bends



and other Rolled Stock in Circles and Curves.

WRITE FOR CATALOGUE.

Bethlehem Foundry & Machine Co.,

SOUTH BETHLEHEM, PA.

BAR PLATE®SHEET METAL FLAT DISC GRINDERS RUDOLPHI & KRUMMEL, CHICAGO, ILLS



Splitting Shear.

PUNCHING and SHEARING MACHINERY,

HAND AND BELT POWER.

MADE BY

New Doty Mfa. Co.,

Janesville, Wis., U. S. A.

The Shear shown in cut is designed for splitting heavy sheets. It will split sheets of any width or any length and three-fourths inch or less in thickness. It is also fitted with special knives for cutting angle iron up to and including four-inch angles. It cuts the angle iron square off without destroying the shape of the angle.

SEND FOR CATALOGUE.

BAYLEY STEAM HOT BLAST HEATING APPARATUS



For FACTORIES, FOUNDRIES,

MACHINE SHOPS, and all LARGE BUILDINGS

IS UNEQUALED.

Manufacturers of Structural Iron Work, Foundry and Machine Work, Steam Traps.

HIGH GRADE HEAVY MACHINERY CASTINGS A SPECIALTY.

Write for full particulars and catalogue.

WM. BAYLEY & SONS CO., 732-766 Greenbush St., Milwaukee, Wis.

STANDARD GAUGES



Made in all sizes, from 1/4 in, to 12 in. Carefully hardened and accurately ground to size.





WRITE FOR OUR NEW No. 6 TOOL CATALOGUE.

THE

John M. Rogers, Boat, Gauge & Drill Works,

Gloucester City, New Jersey, U. S. A

MULTIPLE SPINDLE DRILLS,

4 TO 24 SPINDLES-3-IN. TO 37-IN. CIRCLE.

BAUSH MACHINE TOOL CO.,

Springfield, Mass., U. S. A.

SUCCESSORS TO
BAUSH & HARRIS MACHINE TOOL CO.

AMERICAN AGENTS: MANNING, MAXWELL & MOORE, New York: Chicago; Pittsburg; Cleveland.

EUROPEAN AGENTS: SELIG SONNENTHAL & CO., London. E. SONNENTHAL, Jr., Berlin.



ets.

ζle

MACHINE TOOLS.

Lathes, Planers, Shapers, Boring and Turning Mills, Upright and Radial Drills, Screw Machines, etc.

The American Tool Works Co.

Works: CINCINNATI, U.S.A.

New York Office: 120 Broadway. Geo. Place, Agent.

Philadelphia: The Fairbanks Co.

New Orleans: The Fairbanks Co.

New Orleans: The Fairbanks Co.

Coventry: Alfred Herbert, Ltd., 7 Leonard St., Finsbury, E.C.

DUSSELDORF: De Fries & Co., Act. Ges., Graf Adolph Strasse, 83-87

VIENNA: De Fries & Co., Act. Ges., Eschenbachgasse, 9.

Chicago Store: 68-70 South Canal Street.

Baltimore: The Fairbanks Co.

Cleveland: The Strong, Carlisle & Hammond Co.

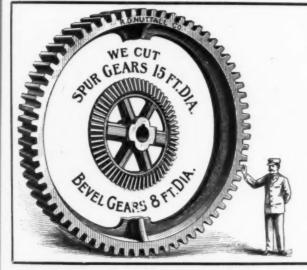
BERLIN: De Fries & Co., Act. Ges., Kloster Strasse, 13-15.

PARIS: Roux Friers & Cle., 54 Boulevard du Temple.

VIENNA: De Fries & Co., Act. Ges., Eschenbachgasse, 9.

ANTWERP: Nyssens Frères, 33 Rue des Peignes.

MOSCOW: Alfred Streken.



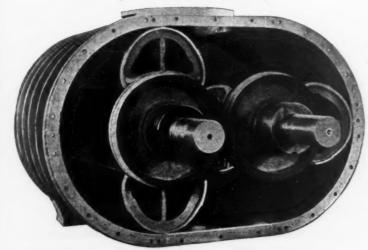
R. D. NUTTALL COMPANY,

PITTSBURGH, PA.

~~~~

GEAR CUTTERS.





# THE MOST AIR FOR \$1

IS GIVEN BY

The Green Rotary
Pressure Blower

And it weighs less, occupies less space, and is more positive in action than any other blower.

Send for New Catalogue B.

WILBRAHAM BAYER BLOWERCO.

2518 Frankford Ave., Philadelphia, U. S. A.

Sales Agents, FRASER & CHALMERS, Inc., Chicago, Ill., and Branch Houses.

WINDSOR MACHINE CO.

WINDSOR, VT.

TURRET LATHES.

**Brass-Working Machinery.** 



# HIGH CLASS MACHINE TOOLS

# Hartford Automatic Screw Machines

In ten sizes, for making Screws, Studs, Bicycle Hubs and other pieces of circular cross section and various outlines from

bars of round, square or hexagon metal, in diameter 1-16 to 3 1-16 inches. All needed adjustments are provided for. One man can attend a half dozen machines.

Tools made to order for finishing pieces to sample.

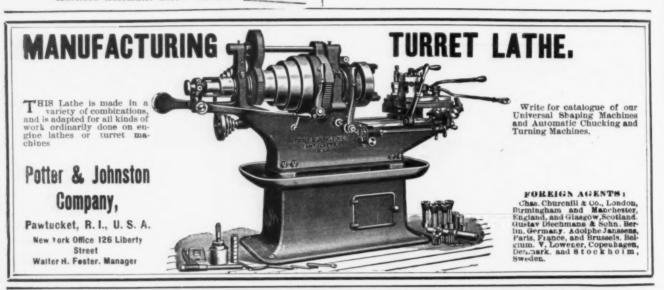
Write for further particulars and "Hardware" Catalog.

### PRATT & WHITNEY COMPANY.

Works: HARTFORD, CONN.

BRANCHES: New York, 123 Liberty St.: Boston, 144 Pearl St.; Chicago, 42 S. Clinton St.; Buffalo, Seneca and Wells Sts.

FOREIGN REPRESENTATIVES: London, England, Buck & Hickman, 240 Whitechapel Road; Paris, France, Fenwick Freres & Co., 21 Rue Martei; V. Lowener, Copenhagen, Denmark, and Akthebolaget V. Lowener, Stockholm, Sweden; Dusseldorf, Germany, and Vicona Austria, de Fries & Co.



# RET MACHIN

Suitable for STUDS and **BOLTS** 

and a large variety of general work.

Send for Catalogue.

Also Boring and **Turning** Mills.

Send for Catalogue.

BULLARD MACHINE TOOL CO., Bridgeport, Conn., U. S. A.

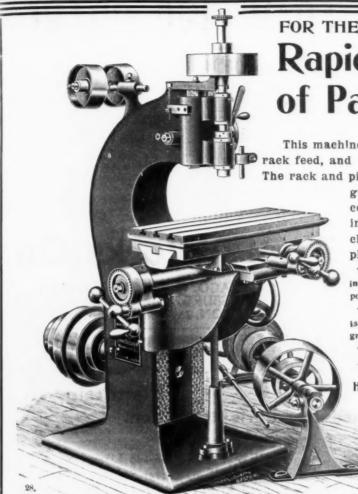
MARSHALL & HUSCHART MACHINERY CO., Chicago, Cleveland and Cincinnati. SCHUCHARDT & SCHUTTE, Berlin, Vienna, Cologne, Stockholm and St. Petersburg. ADOLPH JANSSENS, Paris. CHARLES CHURCHILL & Co., Ltd., London, Birmingham, Manchester and Glasgow.

RADIAL, MULTIPLE, UPRIGHT and LOCOMOTIVE SHOP

MACHINE TOOLS.

EXTENSION, FACING and ENGINE

VIN HARRINGTON, SON & CO., Philadelphia, Pa., U. S. A.



# Rapid Duplication of Parts.

This machine, our No. 3H size, is provided with rack feed, and is specially designed for profiling. The rack and pinion method of feed by means of a

guide pin is here adopted. It is exceedingly well adapted for general use in bieyele shops, gun and sewing machine factories and for the rapid duplication of parts.

THE PLATEN has working surface of 27 in. x 10 in. Handles are adjustable to a higher or lower position to suit convenience of operator.

THE HEAD has vertical movement of 4 in. and is fed through compound gearing with finely graduated stop gauge.

VERTICAL ADJUSTMENT of knee is 16 in.

Horizontal Milling Machines and Gear Cutters in a full line of sizes.

> **BECKER-BRAINARD** MILLING MACHINE CO.,

> > HYDE PARK, MASS., U. S. A.

We Build

16

MACHINES, MACHINE PARTS, Also BRASS CASTINGS

Everything done right. Send for estimates.

Contract J. B. CHAPMAN & CO., - Springfield, Mass.

PETER GERLACH & CO.,

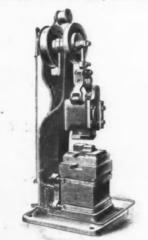
CLEVELAND, O.,

Ice Tools Logging Tools, Keg Machinery.

Goldand Silver Medals

Just Awarded at the Paris Exposition. Please examine our three exhibits at Champ de Mars and Vincennes.

DUPONT POWER HAMMER.



FEATURES.-Simplicity; Easy Adjustment; Great Economy of Power; Durability; Large Range of Work.

SEND FOR CATALOGUE.

THE DUPONT MANUFACTURING CO., ST. JOHNSBURY, VT., U. S. A.

**All Sizes** for all

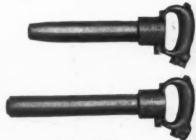
Services

Chipping, Riveting,

Calking,

Flue.

Beading.



CATALOGUE.

Philadelphia Pneumatic Tool Co.,

NEW YORK: PHILADELPHIA: PITTSBURGH:
149 Broadway Stephen Girard Wood and Water #ts.
Building.

BOSTON: Exchange Building.

# NILES ELECTRIC TRAVELING CRANES.



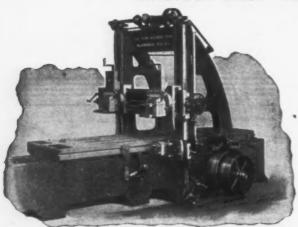
BOSTON, 65 Oliver Street.

NEW YORK, 136-138 Liberty Street. PHILADELPHIA, 21st and Callowhill Streets.

CHICAGO, Western Union Building. PITTSBURG, Carnegie Building. LONDON, 25 Victoria Street, S. W.

POND MACHINE TOOL CO., Plainfield, N. J.

Awarded Gold Medal at Paris Exposition.



42-IN. PLANER. SQ. DRIVE.

#### OFFICES:

NEW YORK, 136-138 Liberty St. BOSTON, 65 Oliver St. PHILADELPHIA, 21st and Callowhill Sts. PITTSBURG, Carnegie Building. CHICAGO, Western Union Building. LONDON, 25 Victoria Street, S. W.

#### AGENTS:

Berlin and Vienna. GUSTAV DIECHMAN & SOHN, Paris and Brussels. ADOLPHE JANSSENS, St. Petersburg, ATALANTA TECHNICAL AGENCY.



# NILES TOOL WORKS CO.,

Hamilton, Ohio.

MACHINE TOOLS.

Awarded Grand Prize and Gold Medal at Paris Exposition.

#### OFFICES:

NEW YORK, 136-138 Liberty St. BOSTON, 65 Oliver St. PHILADELPHIA, 21st and Callowhill Sts. CHICAGO. Western Union Building. PITTSBURG, Carnegie Building. ST. LOUIS, 615 N. 4th St. LONDON, 28-25 Victoria St., S. W.

#### AGENTS:

PARIS, H. Glaenzer & Perreaud COPENHAGEN, V. Lowener STOCKHOLM, Ak. V. Lowener, BRUSSELS, Adolphe Janssens. HELSINGFORS. Werner Hult. ROTTERDAM, Van Rietschoten & Houwens, JOHANNESBURG, Sheriff, Swingley & Co.

# E. W. BLISS C

11 ADAMS ST., BROOKLYN, N. Y.

ALSO OWNERS OF

The Stiles and Parker Press Co.

A TWENTIETH CENTURY PRESS.

The "Bliss" New Pattern Inclinable Press.

There is probably no type of power press that has met with such general favor among manufacturers of sheet metal goods as the line of inclinable presses illustrated, which we designate by the numbers 18 to 21. This line of presses has been recently redesigned, embodying all the latest and best ideas in press construction known to the Experts in press construction will at once appreciate the straight line principle adopted, which not only produces a graceful appearance, but also a much more rigid frame, resulting in greater strength with the same amount of metal. The weight of these presses has also been increased, making a much greater increase in strength over the old nattern.

The slides and gibs are very long, thus insuring the best results and longest life for dies and tools usually operated in such presses. The shafts are of the best forged steel, of large proportions and well fitted. The slide connections in the larger sizes are made of forged steel, are bronze bushed, and practically unbreakable.

Our "Bliss" Standard Clutch, but of enlarged sizes and of several improvements in the mechanism, is employed, making it the strongest and safest in use, and is, to-day, unequaled for general work. The fly-wheel is bronze bushed, and the bushings may be easily removed when worn.

The press frame is so constructed that the feeding devices, gauges and other attachments can be easily applied. It may also be easily inclined to any angle that best suits the operator, It is built in several sizes, both as fly-wheel and geared machine, ranging in weight from 300 to 6,500 lbs. Write for further particulars.

#### FOR IMMEDIATE DELIVERY.

We have been AWARDED the GRAND PRIZE at the PARIS EXPOSI-TION of 1900 for the Unsurpassed Excellence of our Machinery.

Correspondence Solicited. Estimates Cheerfully Furnished.

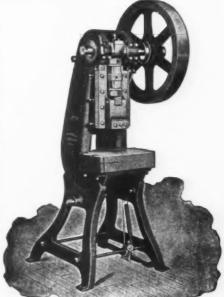
SSES, DIES, DROP HAMMERS & SPECIAL MA

EUROPEAN OFFICE: 22 S. Canal St., Chicago, Ill.

EUROPEAN OFFICE: 12 Ave. De La Grande Armée, Paris, France.

London Agency: The Projectile Co., Ltd., New Road, Wandsworth Road, S. W., Eng.

BERLIN, VIENNA, COLOGNE, STOCKHOLM AND ST PETERSBURG AGENCIES: Schuchardt & Schutte.



"BLISS" NEW PATTERN PRESS, Nos. 18-21.

FOR CUTTING AND FORMING ARTICLES OF SHEET METAL, WIRE, LEATHER, PAPER, &c AUTOMATIC CAN MAKING AND SPECIAL MACHINERY. CORRESPONDENCE SOLICITED.

ADRIANCE MACHINE WORKS,

Near Hamilton Ferry.

124 IMLAY ST., BROOKLYN, N. Y., U. S. A.

The article shown on the opposite side was

made on this machine.

or any kind of special machinery for rapid work

### DESIGNED AND BUILT.

Special Power Presses, Wire Forming Machinery, Hook and Eye, Safety Pin and all kinds of Pin Machinery.

LET US KNOW YOUR NEEDS.

The A. H. NILSON MACHINE CO., Bridgeport, Conn.,

This difficult piece was; made on the machine



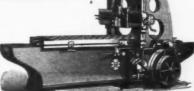
shown on the opposite side of this advertisement.

10 Sizes, 24 in. to 56 in. square, Patent Combination Friction, Dirt Proof Table, Safety Locking Device, Micrometer Adjustment to Down Feed.

THE CINCINNATI PLANER CO., 21, 23, 25, 27 Buck St., Cincinnati, Ohio, U. S. A.

AGENTS: Prentiss Tool & Supply Co., New York, Buffalo and Pittsburgh; Marshall & Huschart Machinery Co., Chicago, Cleveland and Cincinnati; The Niles Tool Works Co., Boston: Wm E. Shipley, Rourse, Philadelphia; Parke & Lacy Co., San Francisco, Cal.; W. R. Coicord Mchy. Co., St. Louis, Mo.: Defries & Co., Act.-Ges., Dusseldorf, Berlin and Vienna; C. W. Burton, Griffiths & Co., London: V. Lowener, Copenhagen and Stockholm; Adler & Bisenschitz, Milan, Italy; A. Englemann & Co., Brussels, Belgium.

AWARDED MEDAL AT PARIS EXHIBITION.

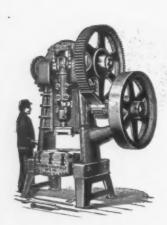


ROD AND WIRE, MERCHANT BAR, FLAT STOCK, COLD ROLLING, WIRE FLATTENING MILLS.

# MILLS

WITH OR WITHOUT ROLLER BEARINGS.

BRASS,
TIN AND
COPPEN,
ZING AND
TIN FOIL
MILLS,



# MOSSBERG AND GRANVILLE MFG. CO., PROVIDENCE, R. I.

NEW YORK OFFICE, 126 Liberty St. EXHIBITION AT PHILADELPHIA BOURSE.

FOREIGN AGENTS:

CHARLES CHURCHILL & CO., Ltd., London and Sirmingham, England.
A. MATHEY DORET, La Chauz-de-Fonds, Switzerland.
DE FRIES & CO., Dusseldorf and Berlin, Germany, and Vienna, Austria.
ADOLPHE JANSENS. Paris. France



POWER AND
PLAIN DROP.
AUTOMATIC
DROP PRESSES.
DIAL PRESSES.
SPRUE PRESSES.

# PRESSES

WIRE DRAWING MACHINERY, AUTOMATIC DRAW BENCHES, COILERS, ROTARY SWAGING MACHINES,

# Sturtevant Forges

BUILT FOR ENDURANCE

Heavy Steel Plate Hoods
Large Bearings and Carefully Fitted
Running Gear
Efficient Blowers
The Best of Materials and Workmanship

Door of Materials and Worldham



SEND FOR ILLUSTRATED CATALOGUE NO. 91.

B. F. STURTEVANT CO., Boston

97-A

NEW YORK

PHILADELPHIA

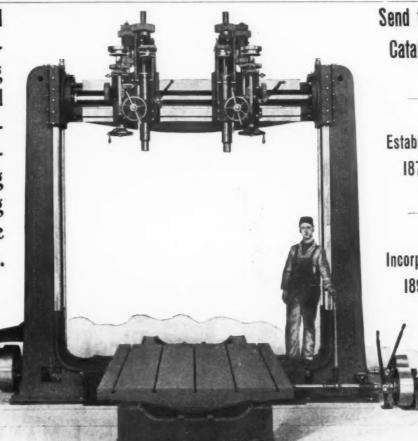
CHICAGO

LONDON

**DLAIN** and Universal Radial Drilling Machines, Vertical Drilling Machines, Boiler Shell Drilling Machines, Suspension Drilling Machines, Radial Drilling and Countersinking Machines, Engine Lathes, 12 in. to 24 in. swing.

Highest Award, Chicago, 1893.

Gold Medal, Brussels, 1897.



Send for Catalogue,

> Established 1872.

Incorporated] 1898.

### PRENTICE BROS. COMPANY,

WORCESTER, MASS., U. S. A.

FOREIGN AGENTS: Schuchardt & Schutte, Berlin, Vienna, Brussels, Stockholm, Cologne and St. Petersburg. Ad. Janssens, Paris. Chas. Churchill & Co., London and Birmingham.

14 in. x 6 ft. DRAPER LATHE.

HAND LATHES, CHUCKING LATHES,

72 in. BORING MILL,

ENGINE LATHES FROM 14 in. TO 42 in. INCLUSIVE.

SEND FOR CATALOGUE

# RAPER MACHINE TOOL CO.,

140 GOLD ST., WORCESTER, MASS., U.S.A.

Sole European Agents:

SELIG-SONNENTHAL & CO., 85 Queen Victoria St., London. Sole Agent in Germany:

E. SONNENTHAL,

Berlin, Neue Promenade 5



\$\$@\$@@@@@@@@@@@@@@@@@@@@

20th CENTURY TOOLS.

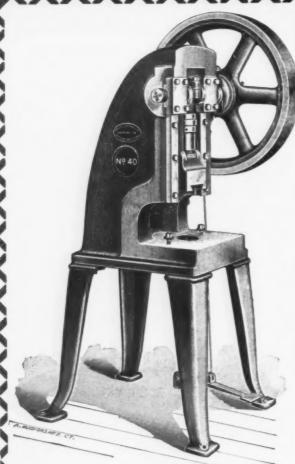
Strong, well built and up-to-date in every particular.

THE cut shows our 20 in. Drill, which we guarantee to drill up to one inch in steel and one and one-fourth inches in cast iron. We believe it is just a little ahead of any other 20 in. drill on the market.

The next size, 23 in. Swing, is about ready for delivery. We shall be glad to send von printed matter.

**ଅନ୍ୟର୍ତ୍ତର ଓ ଉତ୍ତର ଓ ଉତ୍ତର ଓ ଉତ୍ତର ଓ ଅନ୍ୟର୍ତ୍ତର ଓ ଅନ୍ୟର୍ତ୍ତର ଓ ଅନ୍ୟର୍ତ୍ତର ପ୍ରତ୍ୟର ପ୍ରତ୍ୟର ପ୍ରତ୍ୟର ପ୍ରତ୍ୟର ପ୍ର** 

B. F. BARNES COMPANY, = - ROCKFORD, ILLINOIS.



No. 40 Open Back Press.

# How Does It Impress You?

THIS IS OUR

# "1900" PATTERN

AND IS ALL RIGHT.

Full list given in our New Issue of Catalogue B, where you may find other things of interest.

WE BUILD ONLY

# First Class Machinery

AND KEEP BUSY.

The E. J. MANVILLE MCH. CO.,

WATERBURY, CONN.

# Brown & Sharpe Mfg. Co., Providence, R. I., U. S. A. Plain Milling... Machine No. 12.

This machine, by reason of its rigidity and ease of manipulation, is well\*adapted to the rapid and economical production of many parts of machine tools, motors, electrical instruments, guns, etc.

### CAPACITY.

Table Feed, 26 inches.

Greatest distance from centre of spindle to top of Table, 7½ inches.

Net weight, about 1800 lbs.

Catalogue mailed to any address.



Chicago Office and Store: 23 So. Canal St.

# OND HAND MACHINERY AT SPECIAL LOW PRICES.

Lathes.

Planers.

96 in. x 20 ft. Triple geared Screw feed, spindle 10 in. wt. 30,000 lbs. 50 in. Pulley Lathe, Two Tools, Niles. 82 in. x 14 ft., Townsend. 82 in. x 16 ft., heavy pattern, Fond. 25 in. x 16 ft., heavy pattern, Fond. 22 in. x 16 ft., Sellers. 30 in. x 10 ft., Blaisdell. 18 in. x 8 and 10 ft., latest pattern. 16,14, 18 and 12 in., best stand. makes.

77 in. x 8½ ft., Two Heads, Pond.
48 in. x 16 ft., Bement, light pattern,
86 in. x 12 ft. Atlas, double head.
82 in. x 10 ft., Pond, Double Head.
82 in. x 10 ft., Pond, Double Head.
94 in. x 7 ft., New Haven.
94 in. x 6 ft., latest pattern, Gray.
21 in. x 5 ft., latest pattern, Flather.
16 in. x 4 ft., Ferris & Miles.

16 in. Crank motion, Latest pattern. 14 in. Trav. Head, Fitchburg. 8 in. Crank, Pratt & Whitney. Shapers. Boring Mills.

40 in. Swing, Single Head, Standard. 40 in. Swing, extended to 72 in., light. 60 in. Swing, Double Head, Sellers, heavy pattern with full auto. feeds. Gear Cutter. f. ll Automatic, for Spur Gears up to 5. in., Gould & Eber. Turret Chucking Lathe, 36 in. awing. Universal Miller, No. i, Brown & Sharpe.

Miscel-Sharpe.
Radial Drill, 96 in. swing, with tapper.
Hor. Bor. Mch., 3 in. bar, 48 in. swing.
Screw Machines, various sizes, 34 to
17-16 in. wire feed capacity, with laneous. atts.
Pipe Machines, 4 and 6 in.
St'm Hamm'rs, 250 and 400 lbs., Morgan

Piate Pianer, 14 ft., Hilles & Jones. Bending Rolls, 10% ft., Sellers. Punches and Shears, single and dbie. Hyd. Riveter, 96 in. reach, Bement. Boiler Tools.

NEW TOOLS-IN STOCK. Gray Planers.  $\begin{cases}
 24 \text{ in. } x \text{ 6 ft.} \\
 30 \text{ in. } x \text{ 8 ft., Two Heads.} \\
 30 \text{ in. } x \text{ 16 ft., Two Heads.} \\
 36 \text{ in. } x \text{ 12 ft., Two Heads.} 
 \end{cases}$ 

"Bradford " Lathes.  $\begin{cases} & \text{36 in. x 16 ft.} \\ & \text{31 in. x 14 ft.} \\ & \text{25 in. x 12 ft.} \\ & \text{21 in. x 12 ft.} \end{cases}$ 

"Kempsmith" Millers. { Universal, all sizes, Plain Automatic, all sizes, sizes.

J. J. McCABE, Street, NEW YORK. 14 Dey Street,

#### MACHINERY BARGAINS.

1 pair 28 in. x 60 in. Harris-Corliss engines.
26 in, x 48 in. Geo. H. Corliss engine.
24 in. x 48 in. Geo. H. Corliss engine.
23 in. x 36 in. Geo. H. Corliss engine.
22 in. x 42 in. Hearris-Corliss engine.
22 in. x 42 in. Harris-Corliss engine.
20 in. x 42 in. Harris-Corliss engine.
20 in. x 42 in. Harris-Corliss engine.
20 in. x 48 in. Harris-Corliss engine.
20 in. x 48 in. Wetherill-Corliss engine.
20 in. x 48 in. Wheelock-Corliss engine.
18 in. x 48 in. Hamilton-Corliss engine.
18 in. x 42 in. Hamilton-Corliss engine.
18 ft. Sectional Fly Wheel, weight 29½ tons.
18 ft. Sectional Fly Wheel, weight 20 tons.
6 in. x 8½ in. x 10 in. Worthington duplex condenser.
5 in. x 7 in. x 10 in. Worthington duplex condenser.

denser.

5 in. x 7 in. x 10 in. Worthington duplex condenser.

10 in. x 18 in. x 24 in. Titusville air compressor.

10 in. x 18 in. x 18 in. Titusville air compressor.

2 75 tons Wetherill-Corliss ice machines.

Send for complete list.

WICKES BROTHERS, Saginaw, Mich. Branch Office and Warehouse: Cor. 45th St. and A. V. R.R., Pittsburg, Pa.

### FOR SALE. IMMEDIATE DELIVERY.

One 18 in.-34 in. x 42 in. Fitchburg Tandem Compound Automatic Engine. One 1634 in.-34 in. x 42 in. Cross Compound Fitchburg

Automatic Engine.
One 164 in. -34 in. x 42 in. Cross Compound Fitchburg
Automatic.
One 28 in. x 49 in. Corliss Engine.
One 26 in. x 49 in. Corliss Engine.
One 36 in. x 49 in. Corliss Engine.
One 16 in. x 49 in. Greene Engine.
One 16 in. x 49 in. In the compound.
One 17 in. x 42 in. Putuam Engine.
One 20 in. x 42 in. Greene Engine.
Two 14 in. -28 in. x 28 in. Cross Compound Fitchburg.
One 13 in. -29 in. x 14 in. Ideal Compound.
Two 18 in. -22 in. x 14 in. Ideal Compound.
One 14 in. x 14 in. Armington & Sims.
Two 10 in. -18 in. x 12 in. Ball Compound.
Several 30 to 200 H. P. high speed Automatic Engines.
Two 250 H. P. Babcock & Wilcox Boilers.
Two 100 H. P. National Water Tube Boilers.
One 50 H. P. Babcock & Wilcox Boilers.
One 50 H. P. Babcock & Wilcox Boilers.
Six 123 H. P. Vertical Boilers.
One 100 H. P. Vertical Boilers.
Several 30, 25, 30, 40, 75 H. P. Locomotive Boilers.
Several 30, 25, 30, 40, 75 H. P. Locomotive Boilers.
Large stock of new Machinery ready for immediate delivery; Steam and Centrifugal Pumps; Lathes, Planers, Shapers, Drills, Milling Machines, Radial Drills, Panches, Shears, Dynamos, Motors, etc.
FRANK TOOMEY, Nos. 127-131 N. Third St., Phila., Pa

FRANK TOOMEY, Nos. 127-131 N. Third St., Phila., Pa Long Distance Telephone 261 and 262.

#### For Sale Cheap.

Not in our late fire. New Gang Punch. Eight foot Bement Hydraulic Riveter, little used. Eight foot Bending Rolls. Boiler and Stack Rivets. Automatic Throttling and Link Engines. Condensers, Boilers, Machine Drills.

PAYNE ENGINEERING CO., 120 Liberty St., N. Y. City. 123 Oliver St.,

#### FOR SALE.

One 37 in. x 87 in. x 8 ft. "Harrisburg Fdy. & M. Co." Planer. One 26 in. x 26 in. x 6 ft. New York Steam E. Co.

Planer One 82 in. Lodge & Davis Drill Pres One 42 in. x 24 ft. Engine Lathe. H. F. & M. Co. One 36 in. x 10 ft. Engine Lathe. H. F. & M. Co. One 30 in. x 14% ft. Engine Lathe. H. F. & M. Co.

One 36 in. Drill Press. Back geared. H. F. & M. Co. One 36 in. "Alfred Box" Radial Drill Press. One Hilles & Jones Punch and Shears, 20 in. throat.

Several Traveling and Jib Cranes.
One 12 in. x 28 in. Watts-Campbell Corliss Engine.
One 12 in. x 30 in. Allis Corliss Engine.

One 14 in. x 32 in. Watts-Campbell Corlise Engine.

L. F. SEYFERT'S SONS, 437-441 N. 3d St., Philadelphia, Pa

# Second-Hand Machinery

Richards open side Planer and Shaper, planes 8 ft. long, 25 in. wide, 24 in. high 30 x 30 x 10 Wm Sellers Spiral Geared Planer. 22 in. Walcott Geared Shaper 15 in. Hendey Shaper. 36 in. Snyder Drill, with revolving table and 24 in.

36 in. Snyder Drill, with revolving table and 34 in. Chuck fitted.
30 x 14 Fifield Lathe, compound rest.
18 x 6 Muller Lathe, compound rest.
14 x 8 Porter Lathe, elevating rest.
14 x 6 Reed Lathe, elevating rest.
14 x 6 Flather Lathe, plain rest.
14 x 6 Flather Lathe, plain rest.
14 x 6 Hendey-Norton Lathe, plain rest, taper attachment.
134 in. National Bolt Cutter.
25 lb. Justice Hammer.
No. 1 Slate's Milling Machine.

S. M. YORK CO., Cleveland, O.

#### FOR SALE. Outfit of Bicycle Shop.

1 13 in. x 6 ft. Robbins Engine Lathe, Compound Rest, 12 in. Four-Jaw Chuck fitted.

1 13 in. x 51/2 ft. Sebastian Gap Lathe, Plain Rest.

1 14 in. x 6 ft Flather Lathe, Plain Rest.

1 18 in. x 8 ft. Oakland Lathe, Compound Rest.

1 20 in. x 10 ft. Putnam Lathe, Plain Rest 1 Brainerd No. 4½ Plain Milling Machine with overhanging arm.

1 14 in. Lodge-Davis Sensitive Drill.

1 20 in. Prentiss Brothers Wheel and Lever Drill. 2 22 in. Sayder Drills, Back Geared, Automatic Feed, Quick Return, etc.

1 Gang Radial Drill, capacity 84 in., Tapping At-

1 18 in Ohio Crank Motion Shaper.

124 in. Hendey Friction Shaper.

3 No. 2 Screw Machines, wire feed, capacity 15-16 1 % in. Tapping Machine.

1 Cincinnati Reamer & Cutter Grinder.

The Fairbanks Company, 701, 703, 705 Arch St., - Philadelphia, Pa.

#### AIR COMPRESSORS.

CLAYTON DUPLEX, 14 in. x 14 in. x 15 in., in good condition, ready for service.

HALL DUPLEX, 10 in. x 14 in. steam cylinder, 14 in. x 14 in. at reyls; fine order.

Good 22 in. x 42 in. WRIGHT CORLISS ENGINE, 14 ft. 6 in. beit wheel, 33 in. face.

56 in. x 36 in. ENGLISH PLANER, 24/4 in. x 7 ft. table; good condition.

Above will be so.d. CHEAP for immediate delivery.

POULTERER & CO., 410 Bullitt Building, Philadelphia, Pa.

#### ENGINES.

1 22 x 40 x 48 Wright Cross Comp. with condenser. 1 75 horse, 60, 40 and 30 Horz. Engines.

#### BOILERS.

1 100 horse Horz. Tubular, manhole under tubes.

#### DYNAMOS.

100 K. W. Direct Connected, used at waldorf Hotel.

1 50 1 1 Beited dynamo each, 500 lights, 400 lights and 200 lights. JOHN E. BEGGS, 47 Cedar Street, N. Y.

# Second-hand Machinery For Sale.

Engines, Boilers, Pumps, Heaters, Iron and Wood Working Machinery, all makes, all kinds. Shafting, Pulley Hangers, Boxes, etc. Mining, Cupola and Forge Blowers. We make a specialty Saw and Planing Mill Machinery.

HARRIS MACHINERY CO. 1045 Washington Ave., S. E., Minneapolis, Minn.

# Hilles & Jones Plate Straightening Rolls No. 2.

Has six rolls 10 in. diameter and will take a plate 60 in. wide, weight about 23,400 lbs.

HENRY F. HILL,

Boston, Mass.

New and Second-Hand Machine Tools.

# HARRINGTON SUSPENSION DRILL No. I.

USED ONLY THREE MONTHS.

# The Lodge & Shipley

Machine Tool Co..

Cincinnati, Ohio, U.S. A.

# Second-Hand Machine Tools

IN FIRST-CLASS SHAPE.

- Brainard Miller, No. 26, with centres.
- I Brainard Standard Miller, No. 4%. I Brainard Hand Miller, small size.
- I Brainard Universal Miller, No. 15.
- Pratt & Whitney Screw Machine, No. .
- Wells Bros. Aut. Screw Machine, inch.
- I Prentice 21 inch Drill, B. C.
- Woodward & Rogers 2 Spindle Drill.
- Woodward & Rogers 4 Spindle
- I Perkins Press, No. 4.
- I Perkins Press, No. 5. And many others.

#### HILL, CLARKE & CO..

156 Oliver St., Boston, Mass.

# SECOND-HAND MACHINERY.

1 62 in. x 60 in. x 22 ft. Planer.
1 48 in. x 48 in. x 14 ft. New Haven Planer.
1 54 in. x 54 in. x 20 ft. 4 Head Planer.
1 32 in. x 32 in. x 12 ft. 2 " "
1 30 in. x 30 in. x 8 ft. Planer, A1.
1 30 in. x 16 ft. New Haven Lathe.
1 12 in. Crank Shaper, Cheap.
1 14 in. x 42 in. Morgan Steam Hammer.
1 Plate Planer, planes 16 ft. long.
2 600 lbs. Merrill Drop.
1 Combined Punch and shear, cuts and punches 16 ft.

1 Combined Function and Shoat, of the 1/4 in.
1 Sand blast outfit, complete.
1 150 lb. Merrell Air Cushioned Hammer.
1 6 ft. 6 in. Gap, 50 ton Hydraulic Riveter.
1 14 in. x 14 in. x 15 Al Clayton Duplex Air Com-

pressor. 1 200 H. P. Berryman Heater. NEW YORK MACHINERY DEPOT,

# Office, 178 Broadway, N. Y.

FOR SALE. 36 in. x 72 in. Corliss Engine, 50-ton Wheel, 32 in. x 60 in. 30 " 250 H. P. Compound Westinghouse Engine, 50 K. W. Direct Connected Dynamo. Surface Condensers.

Surface Condensers.

Jet Condensers.

Jet Condensers.

16 in. x 16 in. Ball & Wood Engine.

15 in. x 16 in. Ball & Wood Engine.

15 in. x 16 in. x 18 in. Cross Compound Armington & Sims Engine.

15 in. x 14 in. Erle Automatic Engine for direct connection to Dynamo.

14 in x 16 in. Straight Line Engine.

12 in. x 12 in. Ball & Wood Engine.

10 in. x 12 in. Ball & Wood Engine.

10 in. x 12 in. Ball & Wood Engine.

9½ x 12 in. Armington & Sims Engine.

MADVIN ENGICE.

MARVIN BRIGGS, 12 Broadway, N. Y. City.

# Second-hand Machinery

GRINDERS.

ENGINE LATHES.

in x5 ft. Le Blond Tool com.

lin x6 ft. Span R. & F.

lin x6 ft. Span R. & F.

lin x6 ft. Blaisdell, R.

lin x6 ft. Blaisdell, R.

lin x6 ft. Porter, R. & F.

lin x6 ft. Ames Man's

13 in. Tray. Hd. Sellers.

14 lin. troke Blas.

12 lin. troke Blas.

12 lin. troke Blas.

13 lin. G. a E., with ex.

base.

PRILLS.

13 lin. Harris, B. G.

13 lin. Harris, B. G.

(Gan.")

Large stock new machines. Prices on application.

Two 20-ton Hand Traveling Cranes, 58 ft. 10 in. spao.

Send us lists of machines you have for sale, or

#### THE NILES TOOL WORKS CO.,

136-138 LIBERTY STREET, NEW YORK CITY.

#### IMMEDIATE DELIVERY.

12 Plain Vertical Engines, 3 to 50 H. P.
Plain Horizontal Engines, 10 to 150 H. P.
Automatic Engines, 3 to 300 H. P.
Direct Connected Engines, 3 to 300 H. P.
Simplicity, strength and Highest ediciency,
Hoisting Engines, 6 to 100 H. P., single and double cylinders and drums.
Full line Machine Tools and Wood Working Machinery,
Write us for Catalogue No. 100.

PENNSYLVANIA MACHINE CO.

The Bourse, Philadelphia, Pa.

### CONTENTS OF Portsmouth Machine Co.'s Plant.

PORTSMOUTH, N. H.

FOR SALE IN LOTS TO SUIT.

This plant was in use eight years in the manufacture of Plumbers' Brass Goods, which were well and favorably known in the market and comprises:

Machine Plant of 100 Machines, with small tools and fixtures.

Foundry Plant of a5 Furnaces, 500 Flasks, Tongs, etc.

Pattern Room, covering all Metal and Wood Patterns used in the business.

The whole or any part in lots to suit, will be sold on inspection at private sale, and at prices that will pay any one interested to investigate, whether for use or to resell. Circulars of contents will be mailed and full particulars with prices on application to

S. T. LUND. 120 High Street, Boston, Mass.

One 18 x 48 Wheelock Corliss Engine, complete, \$1,000.
One 20 x 42 Wright Automatic Engine, complete, \$1,200.
Eight 60 x 46 Horizontal Steel Tubular Boilers, complete, a bargain.
12 x 36 Lane & Bodley refitted Corliss Engine at \$730.
Three 11 x 18 celebrated Straight Line Automatic Engines, complete, at a bargain.

Send for Late Stock List.

NORTON & COLE MACHINERY CO., Cincinnati, O., 6th & Carr Sts.

# FOR SALE.

500 to 600 tons wrought iron Ship Plates, suitable for floor plates, carload lots, size about 3 ft. x 12 ft. x 1 in. and 4 ft. x 12 ft. x 3/4 in.

A. V. KAISER & CO., 222 So. 3d St., Philadelphia.

# Special Bargains.

MACHINE TOOLS.

54 in. x 8 ft. Pond Horizontal Boring Mill, triple geared.
16 in. x 24 in. Crank Planer.
16 in. Swing Drill Peasan. in. x 24 in. Crank Planer, in. Swing Drill Presses, in. x 12 ft. 8 in. Sellers Lathe, triple geared. in. Bement Vertical Boring Mill.

CAR WHEEL PRESS.

154 in. Hydraulic Press, complete with pump.

TRACK SCALES-Standard Gauge.

2 Fairbanks, 110,000 lbs. capacity, 1 S. G. Barker & Son 100,000 lbs. capacity.

SCREENS-Revolving.

2 Screens 68 in. x 11 ft. 6 in. with countershaft and friction clutches.

SHEARS AND PUNCHES.

1 Bement Single Bar Shear, 9 in. knives. 1 Combined Punch and Shear, capacity ½ in. holes in ½ in. plate and shear ¾ in. 1 Combined Punch, Shear and Upsetter.

#### STEAM PUMPS.

x 14 in. x 18 in. Worthington Comp'd

Condensing Duplex. 8 in. x 5 in. x 13 in. Cameron. 12 in. x 7 in. x 12 in. Baake. 14 in. x 12 in. Baake. 14 in. x 12 in. x 18 in. Blake. 7 in. x 14 in. x 10 in. Plunger Pattern. 10 in. x 5 in. x 16 in. Deane Sinker. 7 in. x 4 in. x 6 in. Guid & Garrison Flywheel. 6 in. x 5 in. x 6 in. Worthington Admiralty Pattern.

# THOS. P. CONARD.

119 So. Fourth St., Philadelphia.

#### FOR SALE.

50,000 Fire Brick, good as n 500 feet 12 inch Cast Iron Bell Pipe. 300 New Sugar House Wagon Several large Iron Tanks, both round and square.

J. H. McCLURE & SON,

202 Walnut Place, Philadelphia

### FEED WATER HEATERS.

Largest Stock in America. Will be sold at bargains. These heaters are mostly taken in exchange for our improved Berryman (Kelley's Patent), "A Little Giant," vastly superior to all other feed water heaters, both as to results and durability.

BENJ. F. KELLEY & SON, 91 Liberty St., N. Y.

50 lb. Dienelt "Dead Stroke" Hammer,
No 6 Root Blower.
2 in, Cleveland Auto, Screw Machine,
13 in, x 47 Pratt & Whitney Tool Lathe.
25 in. Horizontal Boring Machine,
27 in, x 87 ft Fitchburg Pianer,
4 in, to 2 in, Jarcekl Pipe Machine,
76 le Bliss G'rd Straight Side Press,
D, G, No 75 Ferracute Punch Press,
No, 51

No. 3 Toledo " "
DAWSON & GOODWIN, 41 So. Canal St., Chicago.

WE buy scrap rubber of all kinds, as well as machinery, scrap iron, &c., removing entire plants where required.

WALSH'S SONS & CO.,

Newark, N. J.

#### FOR SALE

AT A BARGAIN.

1 Second hand Corliss Engine, 14 in. x 42 in.

1 Blake Stone Crusher, 15 x 9 with screen,

1 Dean Duplex Steam Pump, 5 x 31 x 5.

3 Edson Diaphragm Pumps

WM. FLINTOFF, Haverhill St., Boston.

# 2d=Hand Machinery Bargains.

One 16 in. x 36 in. Harris and 22 in. x 42 in. Wright Corliss Engines. High Speed Automatic, Simple, Compound, Condensing and Slide Valve Engines, also Blowing Engines, Air Compressors, Boilers, Heaters, Pumps, Vacuum Pans, Ice Machines, Electric Motors, Generators, Railway Supplies, Metal Working and General Machinery.

CHAS. BEHLEN,
72 Trinity Place, N. Y.

Boston, Mass.

One 150 H. P. Heine Water Tube with full set fixtures and trimmings. Hartford allows 125 lbs. pressure.

One 66 x 16 Tubular Boiler, 64 4 in tubes, brand new breeching and stack 32 in, x 60 ft. Allowed 100 lbs, pressure

Four 60 x x6 Tubular Boilers, 44 in. tubes; 100 pounds pressure.

Two 44 x 16 Boilers, thirty 4 in. fluenew fronts, all fixtures and trimming. Allowed 100 pounds pressure.

One 1200 H.-P. Berryman Feed Water Heater. Used two months. Built 1898.

# ENGINES.

One right hand Wetherill Cor-One right hand Wetherill Corliss Engine, cylinder 28 x 60; flywheel 20 feet diameter, weight 30 tons; shaft 15 in. x 12 ft. 6 in.; rope drive pulley 18 ft. diameter and grooved for 15 2-inch ropes; driven wheel 78 in. diameter grooved for 13 2-inch ropes; two iron idlers with boxes complete. With or without Independent Condenser 10x14x16.

20 in. x 24 in. Erie City "Class ?' Automatic Cut-off Engine, by: Automatic Cut-off Engine, balanced valve, left hand; Tangye bed, very heavy, weight complete, 35,000 lbs., 250 horse-power. Used four months.

One to x 20 Box Bed Slide Valve, wheel 72 iu. x 12 in. complete.

> W. W. WHITEHEAD, DAVENPORT, IOWA.

### FOR SALE.

Second Hand Machine Tools, Etc.

Two ten stamp belt-driven Atmospheric Stamps. One 30 in. Boring and Turning Pulley Lathe. Defiance Balancing Machine. One Shaft Straightening Machine, 28 ft. bed. One double end Shaft Centering Machine. One Garvin No. 2 Hand Milling Machine. One (each) No. 3, No. 2 and No. 4 Dallett Portable

One 20 ton 4 for Crane, 10 ton capacity. Send for photo, price, \$200.

THE FILER & STOWELL CO.,

Milwaukee, Wis

# Blooming Mill Engines For Sale.

A pair of Reversing Engines, 28 x 48, with countershaft and extra heavy gear wheels in Steel, all set in massive box b d plates; built by Mackintosh, Hemphill & Company, and used about four years; bloomed six hundred tons of four inch billets per day from 16 in. x 18 in. ingots. Well adapted for an open hearth plant; are in good condition. Apply to are in good condition. Apply to

OLIVER & SNYDER STEEL COMYANY, Pittsburgh, Pa.

# Wanted to Make

We have a complete modern manufacturing plant near Boston, equipped with Power Presses, Automatic Screw Machines, Nickel Plating and Polishing Plant and want to correspond with parties having articles that can be made in such a factory. Address

" W.,"

care The Iron Age, 70 Kilby Street,

# SECOND-HAND MACHINERY. Thurston Inverted. No. 15 Garvin Plain. No. 1, No. 2 and No. 8 Garvin Plain. D. W Pond Index. No. 1 Garvin Hand. P. & W. Lincoln.

Miscellaneous.

ft. Arn Bickford Plain
Radial Drill.
4 ft. Arm Bickford ditto,
Univ. Table.
26 and 28 in. Snyder Univ.
Uprights.
24 in. Plain Drills.
21 in. Prentice Bros., Sld.
Hd., B. G. & P. F.
1, 2, 3 and 4 Spindle Gang
Drills

1, 2, 3 and a ... Drills 94 in. Hendey Shaper.

#### LATHES.

- Wilmarth.
  Ames Pulley.
  Betts.
  ft. 6 in. Pond.
  12 Wright.
  New Haven.
  Stevens Pulley.
- Stevens Pulle Fifield. Betts. Harrington. Prentiss.
- Putnam. Cincinnati. Barker & Chard. New Haven.
- fifield.
  Lathe & Morse.
  Spant & Bogart.
  Blaisdell, Taper.
  Prentiss.
  Ames, R. & F.
  Barnes, Foot Power. 16 Fines, to 17 4 Barnes, Foot 18 Harnes, 18 Harnes, Foot 18 H
- 24 in. Hondey Shaper.
  15 in.
  2 % in. Bar Bement Boring
  Machines.
  70 x 16 Whittler ditto.
  4 in. Pipe Machine.
  No. 21 Bilss Fress.
  No. 2 and No. 3 Stilles dittos.
  No. 66 Bilss Press.
  No. 4 Merriman ditto.
  2,000 ib. Merrill Drop.
  400 to 1,000 ib. dittos.
  272 in. gril. Squaring Shears.
  Pusey & Jones Double Angle Shear.
  16 in. Bement Punch and
  Shear.

- 46 x 10 Pond, 2 Hds. 48 x 10 Wilmarth. 25 x 15 Whitcomb. 90 x 8 Sellers. 22 x 10 Parshley. 32 x 8 Fitchburg. 26 x 6 Putnam
- 32 x 8 Firchburg, 25 x 6 Putnam. 24 x 5ft. 10 in. Whitcomb 18 x 5 ft. Gage. 20 x 4 P. & Whitney. 16 x 8 / Putnam.

# PRENTISS TOOL & SUPPLY CO., 115 Liberty Street, New York. Buffalo Office: 804 D. S. Morgan Bldg.

#### BARGAINS.

One 16 in. x 36 in. Wetherill Corliss Engine, prac-tically new. Large stock of Corliss, Automatic and Plain Slide

Large stock of Corliss, Automatical Large stock of Corliss, Automatical Valve Engines.

Horizontal and Vertical Boilers, all sizes and descriptions. Let us know your needs

LOVEGROVE & CO.

Philadelphia, Pa.

# For Immediate Delivery.

One pair of 28 in. x 60 in. mine hoisting engin One pair of 24 in. x 48 in. mine hoisting engines. Lot of light relaying rails.

Contractor's Plant For Sale or Rent.

GRANT & WILLIAMS,

Park Row Bldg., New York, N. Y.

1 1500 H.-P. Corliss Engine. 1 200 H.-P. Corliss Engine. 150 Horizontal Tube Boilers. 4 100 Horizontal Tube Boilers. 1 125 H.-P. Horizontal Tube Boiler. 8 20 H.-P. Lorgish Boilers. 4 150 H.-P. Berryman Feed Water Heater. 1 Jydraulic Riveting Machine 86 in. gap. 1 Power Shears. Set Boiler Rolls. 42 in. 1 Double Arbor Milling Machine. 1 43 in. Swing Lathe, Short Bed. 1 Horizonal Boring Machine. 8 New Woodward Pumps. 8 Pulcys, 7ft. diam., 25 in. face, 55-16 in. bore. 1 Shaft, 20 ft. ong, 5 5-16 in. diam. 4 Pillow Blocks for same. 2 Double Belts, 104 ft. and 86 ft. x 18 in. Large lot of maller sizes in prime order. ROBERT J. GRAY. 52-54 East 132d Street, New York.

# FOR IMMEDIATE SALE.

One Compound Non-Condensing Dean of Holyoke Duplex Punp. Cylinders 20 x 30 and 16 x 24. Can be fitted for condensing on request. This pump has never been used, was built for an elevator system which was chauged at last moment and pump was not needed. The capacity of this pump is \$,000,000 gallons per day against 20 pounds pressure. This pump can be bought very cheap. For further particulars, address JEFFERSON IRON CO., Birmingham, Alabama.

# CORLISS ENGINES FOR SALE.

- 1 34 x 60 Right Hand Horizontal Engine with 24 ft. 30 ton fly wheel.
- 1 34 x 60 Left Hand Horizontal Engine with 25 ft. diameter, 40 ton fly wheel.

  1 24 x 56 Right Hand Horizontal Engine with 21 ft.
- tiameter band wheel, 43 in face.

W. J. CARLIN COMPANY. 610 and 611 Lewis Bldg., Pittsburg, Pa.

NEW YORK OFFICE:

514-515 Park Row Bldg., New York, N. Y.

#### FOR SALE.

ond-hand Steam Engines, Boilers and s. Large variety of sizes and makers. F. McSWEGAN & SONS, Dover St. and Franklin Sq., New York.

ENGINES, STATIONARY and MARINE. 2 Eaton and Prince Passenger and Freight Eleva-

tors.
2 Upright Marine Engines; also one 14 x 18, and one 12 x 20 Horizontal Engine.
Machinery bought, sold and erected,
WM. GRUENDLER, 928 N. Main St., St. Louis, Mo.

# EXCEPTIONAL BARGAINS.

4 45 K. W. Edison, Bi-polar, 110 volt dynamos. 1 New 40 K. W. Stanley, two phase, 2000

alternator.

1 400 ampere hour, Chloride Accumulator Co. storage battery

1 15 x 14 Ideal engine

1 141/2 x 15 McIntosh & Seymour engine.

 $2\ 18\frac{1}{2}\ x\ 18\ Ideal\ engines$ 

1 20 x 36 x 18 Ideal cross compound engine.

171/2 x 5 x 6 Duplex feed pump. 1 1000 H. P. Austin open heater.

Write for our latest price list No. 41.

#### ILLINOIS MAINTENANCE COMPANY,

EDWIN H. CHENEY. Mar ..

1625-204 Dearborn St.,

CHICAGO, ILL.

42 inch Schellenback Pulley Lathe, Bores

and turns simultaneously.

1 Newton Facing and Milling Lathe.

1 51 in. x 23 ft. New Haven Lathe.

1 84 inch x 28 foot Triple geared Bement Miles Lathe. 130 inch x 16 foot Fifield Lathe.

1 32 in. x 32 in. x 8 ft. New Haven Planer. 1 42 in. x 42 in. x 14 ft. Gray Planer. 1 5 ft. American Radial Drill.

Write us your wants

#### J. B. DOAN & CO.,

68-70 So. Canal St., Chicago.

# For Immediate Delivery.

Engine Lathes, 10 in. to 32 in. swing.
Speed Lathes, 10 in. to 20 in. swing.
Shapers, 10 in. to 26 in. stroke.
Planers, 20 in. to 34 in.
Drill Presses, 10 in. to 28 in.
Mailing Machines, Hand and Power.
Screw Machines and Monitor Lathes up to 20 in.
Feed and Power Presses, a variety of sizes.
Drop Hammers with and without automatic lifts.

Freed and Fower Fresses, a variety of si Drop Hammers with and without auton lifts. Hurlburt & Rogers Cutting-off Machines.

Send for catalogue of Presses.

# The Danielson Machine & Tool Co.,

CLEVELAND, O.

# **Hoisting Engines?**

We have fifteen smaller and medium sized Single, Double and Four Drum Engines in stock. Steam and Centrifugal Pumps? Twenty-four various sizes and makes.

sizes and makes.
Lidgerwood Cableway, 1,000 ft. span.
Boiler and Three Drum Engine.
34 yard Little Giant Steam Shovel.
27 1½4 yard Western Dump Cars.
44 yard four-part Clam Shell.
125, 80, 70, 60, 55, 50, 40, 35, 30, 25 and smaller Portable, Vertical and Horizontal Boilers.
225 pound Steam Hammer.
300 Light Dynamo and Engine.
14 x 42 Cooper Corliss Engine.
14 x 24 Carlin Engine, and others.

MACHINERY & SOLITION H. CARLIN, Prop.,
Allegheny, Pa. CARLIN MACHINERY & SUPPLY CO.,

101-107 Lacock St.,

### WANTED.

One second-hand 10 in. Slotting Machine, One second-hand Up-Setting Machine with 11/2 to 2 in. capacity.

One second-hand Engine Lathe, 40 to 44 in. swing x 18 ft. 6 in. between centers, screw or rod feed.

One second-hand 24 to 30 in. x 20 ft, centers, modern Screw Cutting Engine Lathe.

Address BOX 1567,

Providence, R. I.

# Special Bargains.

#### Second-Hand Tools.

SCREW MACHS.

MILLING MACHS.

MISCELLANEOUS.

112 in. P. & W.Facing Meb 112 in. W. & S. Monitor. 1 No. 2 American Monitor. 1 Set of Nicholson Exp.

Profiler.

1 Bement Hyd. Rail Bender
170 in. Hyd. Wheel Press.
2 No. 4 Stiles & Parker Fly
Wheel Presses.
16 in. Pipe Mach., Cox &
Sons.

Sons.

1 Valve Surfacer, Spring-field.

1 30 in. Gould Semi-Auto. Gear Cutter.

1 87 in. Baush & Harris
Boring Mill.

1 Washburn Drill Grinder.
1 Gastin Strew Slotter

1 No. 2 H. & J. Vertical. 2 No. 4 Garvin, plain. 9 Ames Lincoln.

#### LATHES.

- ft. 6 in. Putnam.
- x 5 Putham. x 6 Putham. x 6 Pratt & Whitney. x 6 Brown. x 6 Harrington.

- Somerset.
  5 Wm, Gleason.
  5 Fuller,
  6 Fratt & W., plain.
  7 Pratt & W., plain.
  8 Pratt & W. (Co.
  7 Pratt & W. (Co.
  7 Pratt & W., plain.
  8 McMahon.
- 20 x 8 Stover, 20 x 8 Bullard, 20 x 10 B'g'pt Chucking, 21 x 8 Dustin & Hubbard, 22 x 12 Fifield, 26 x 12 Lathe & Morse, 30 x 16 Fifield, 32 x 14 Pond, B'ment Single Axle Lathe
- 1 Set of Nicholson Exp.
  Arbors.
  2 N. Y. Tube Welders.
  1 Set of Adams & Price
  Snuff Mills.
  1 P. & W. Nut Topper.
  1 Wood, Light & Co. 2 sple,
  Profiler.
  1 Bement Hed

#### PLANERS.

18½ x 14½ x 43 Ames Screw 26 x 26 x 6 N.Y.S. Eng. Co. 60 x 60 x 20 Fitchburg. 14 ft. 6 in. Sellers Plate.

#### DRILLS.

1 10 in. Bench, York.
1 3-spindle Ames.
1 3-spindle Garvin.
20 in. Prentice, lever feed
1 25 in. Weeks & Halsey.
1 Bement & D. Upright.

#### SHAPERS.

9 in. Crank, Bement. 12 in. Crank, Juengst 15 in. Fric., Hendey. 16 in. Fric., Putnam. 20 in. Fric., Juengst.

l Washburn Drill Grinder.

I Garvin Screw Slotter.

1 Abbe Bolt Header.

1 Hor. Boring Mill, Bement & D.

1 Morton Keyseater.

1 No. 1 Davis Keyseater.

1 4 in. Centering Machine.

16 in. Cutting-off Machine.

18. & S. Grindstone and

1 B. & S. Grindstone and Trough. 1 No. 2 Brown Bolt Cutter. 1 Gisholt Tool Grinder. 1 No. 1 Buffalo Pow. Forgo.

If you want to buy or sell let us know.

Send for Special List.

MANNING, MAXWELL & MOORE, 85-87-89 Liberty St., N. Y. City.

Branches at Chicago, Pittsburgh and Cleveland.

### Second-hand Engines, Boilers, Iron and Wood Working Machinery FOR IMMEDIATE DELIVERY.

1 2 H.-P. Bryant Oil Engine, good order and com-

1 2 H.-P. Bryant Oil Engine, good order and complete.
3 H.-P. Spencerport Vertical Engine and Boiler combined, fair order.
1 10 H.-P. O. & S. Vertical Engine, nearly new.
1 7 x 8 Vertical Engine, fair order, price low.
1 9 x 9 Vertical Engine, old style but in good order.
1 10 x 12 Tifft Engine, fair order.
1 50 in. Clement Back Knife Lathe, used 30 days.
1 10 in. 4-side Houston Moulder, good as new.
1 24 in. Wood Frame Planer and Matcher, fair order, price low.
1 36 in. Niagara Squaring Shear, in prime order.
1 3000 lb. Graves Elevator Drum, thoroughly overhauled.
1 45 in. Buffalo Pressure Blower, good as new.
1 72 in. Sturtevant Blower and Large Coil Heater, in A.No. 1 order.
1 8 in 7-hole Turret Head, with carriage, good order.

order.
1 No. 3 Stiles & Parker Power Punch, good working order.

1 16 x 6 Blaisdell Lathe, B. G. Screw and Rod Feed,

fair order. 1 13 x 6 Brass Workers' Lathe, good working order. For further particulars address

#### THE W. P. DAVIS MACHINE CO., 126, 128, 130 Mill St.,

ROCHESTER, N. Y.

Horizontal Engines.
One 26 in. 42 in. x 48, Welsel & Vilter, Corliss Horizontal, Cross-compound, Condensing Engine
One 19 in. 34 in. x 44 in., Hoffman & Billings, Corliss
Horizontal, Tandem Compound Condensing

Engine.
One 16 in. 30 in. x 42 in., Allis Corliss, Horizontal Tandem-compound Condensing.
One 14 in. 36 in., Vilter Corliss Engine.
One 16 in. x 16 in. Ball Automatic Engine.

# Tubular Boilers.

Three Horizontal Tubular, 66 in. x 16 ft. Boilers. Two Horizontal Tubular, 72 in. x 16 ft. Boilers. Two Horizontal Tubular, 60 in. x 16 ft. Boilers. Three Horizontal Tubular, 60 in. x 16 ft. Boilers, each with Orvis patent furnaces.

WISCONSIN MACHINERY CO.,

125-127 West Water St., Milwaukee, Win.

#### INVESTMENTS

Are offered by J. H. Hillman & Son, Empire Building, Pittsburg, Pa., in the following first

#### BLAST FURNACES IN PENNSYL

vania.
No. 1, catacity 300 tons daily, now running, making over \$5 per ton profit. Can be turned over promptly. Will pay half the cost this year.
No. 2, capacity 200 tons daily, now running with

LAKE SUPERIOR (Mesaba) IRON ORE

Lands. Ready for operation August 1st.

TWO HUNDRED COKE OVENS AND

FIFTY COKE OVENS AND COAL Lands on the Main Line of Pennsylvania Railroad.

CONNELLSVILLE COAL LANDS

EIGHTY COKE OVENS AND CON-

FIFTY THOUSAND ACRES OF COKing coal adjoining Connellsville region. Nim foot vein in Fayet.e and Greene Counties, Pa These lands offer the best investments now be fore the American public.

COAL MINING PLANT AND COAL

Lands in Virginia.

Capacity 25,000 tons per annum. Now shipping
East and West. Modern electric equipment.

Coal is like Pocahontas smokeless used in the
United States Navy. Being exported.

FIFTY THOUSAND ACRES OF KEN-tucky Coal and Timber Land.

WELL-KNOWN IRON PROPERTY IN

Kentucky
With well-developed ore mines and millions of tons of ore in sight and has also a large number of farms on the Cumberland and Tennessee Rivers. This property contains 40,000 acres and is a principality in itself.

MANUFACTURING PROPERTY IN

THICK VEIN COAL IN THE MOnongahela Valley.
In the 3d, 4th, 5th, 6th and 7th pools of the Monogahela River.

SOMERSET COUNTY COAL LANDS. n tracts of five, ten, twelve and seventeen thou sand acres each, are cheap and are being sold rapidly to Eastern capitalists,

MANUFACTURING SITE AND COAL Lands on the Allegheny River.
On the Allegheny Valley Railroad is splendid property capable of prompt development.

CANADIAN IRON ORE MINES IN

A MODERN ROLLING MILL.

MANUFACTURING PROPERTIES and sites in Pittsburg and Allegheny Cities, Pa.

FIFTEEN THOUSAND ACRES OF coal in Centre and Clinton Counties, Pa., on the Beech Creek Railroad, suitable for ship-ment East.

TEN THOUSAND ACRES OF COAL on the main line of the Pennsylvania Rail-road, containing four veins of coal, mostly above water. John Fulton, Mining Engineer of Johnstown, Pa., estimates over 80,000,000 tons of coal on this property. Will be sold cheap to a prompt buyer.

A FIRST-CLASS CHARCOAL BLAST

For full information address

J. H. HILLMAN & SON.

Empire Building.
PITTSBURG, PA

### BLOWER BARGAINS.

ROOTS', second hand, bought, sold or exchanged.

All my blowers are overhauled by expert blower machinists.

I do not advertise a "fake" list of blowers not in my possession; my stock is constantly changing.

Write for particulars and prices.

H. M. PAPWORTH,

Ground Floor, 109 Liberty St., New York City.

#### FOR SALE.

1 Ston Yale & Towne Standard Gauge Locomotive Crane
W. J. CARLIN COMPANY,
60-611 Lowis Bidg., Pittsburg, Pa.
NEW YORK OFFICE,
514-515 Park Row Bidg., New York, N. Y.

# NEW

#### FOR IMMEDIATE SHIPMENT.

30 in. Bullard Swivel Head Turret Mill.
37 in. Bullard Mill, two heads.
42 in. Bullard Swivel Turret Head Mill.
76 in. Bullard Mill, two heads.
30 in. x 30 in. x 8 ft. Pond Planer, new pattern.
36 in. x 36 in. x 10 ft. Cincinnati Planer, two heads.
36 in. x 36 in. x 14 ft. Cincinnati Planer, two heads.
40 in. x 17 ft. Triple Geared Fish Engine Lathe.
No. 2 Bickford Radial Drill, plain.
No. 3 Bickford Radial Drill, plain.
No. 3 Bickford Radial Drill, full Universal.
No. 2 Cincinnati Plain Back Geared Milling Machine.
No. 3 Cincinnati Plain Back Geared Milling

No. 3 Cincinnati Plain Back Geared Milling Machine. No. 3 Cincinnati Full Universal Milling Ma-

Cincinnati Full Universal Milling Ma-

chine.
n. Gould & Eberhardt "Victoria" Pat-tern Gear Cutter.
n. Gould & Eberhardt Extension Base

tern Gear Cutter.

24 in. Gould & Eberhardt Extension Base Shaper.

No. 3 Colborn Key Seater.

24 in. American Turret Lathe.

30 in. x 16 ft. Lodge & Shipley Lathe.

36 in. x 12 ft. Lodge & Shipley Lathe, triple

gears. Send Send for our new catalogue. Send for our list of Second-hand Machin-

MARSHALL & HUSCHART MACHINERY CO., 62-64 S. Canal St., Chicago, Ill.

19 S. Water St . Cleveland, O.

510 Johnson Building, Cincinnati, O.

Two in. Rotary Pump. Douglas 14 in. feed Power Two in. Rotary Pump. Dougnas 14 in. leed rower Pump. Douglas 14 in. feed Power or Hand Pump. 7 in. x 8 in. Gould Triplex Power Pump. 4 in. x 5 in Baldwinsville Power Pump. No. 5 Acme Valley Pump No. 2 Acme Valley Pump. Hall Air Pump. 5 in. x 7 in. Cylinder. Knowles Duplex Pump and Receiver, cylinder 14 in. x 24 in. x 4 in. Valley Duplex Steam, cylinder 5 in. x 8 in. x 5 in. Dean No. 2 Steam Cylinder. Knowles Steam Cylinder. Ames Steam Cylinder. Write for Steam Cylinder. Write for list.
HANNAN & FINTON, Springfield, Mass

THE

New and Second-Hand Machinery PROVIDENCE, R. I.

# For Quick Sale.

BRICK PLANT.

Henry Martin Brick Machine, 25,000 cap. Pug Mill, Newton Sander, turn table, \$300.

#### ELECTRIC PLANT.

Hor. Arc Light, 35 Light T. H. Dynamo. 50 H. P. Westinghouse Compound Engine, \$600.

#### BOILERS.

Two 75 H. P. Horizontal Tubular Boilers, good for 90 lb. steam pressure, \$400.

TRACK SCALE.

20 ton Howe Track Scale, \$90.

SCHULTZ & CO. Rothschild Bldg., Philadelphia, Pa.

# Must Be Sold Quickly.

16 in. x 24 in. Russell four-valve engine, \$8
16 in. x 42 in. Hamilton Corliss engine, \$14
13 in. x 12 in. Erie Ball Auto. Engine, \$350.
150 H. P. Tubular Boilers, each \$450.
No. 8 Wood Arc Dynamos, each \$175.
70 K. W. G. E. Alternator, \$550.

STANDARD MACHINERY AND EQUIPMENT CO., 728 Rose Bldg., Cleveland, Ohio

# WANTED.

State make, Rivet Machines capacity and price.

GARLAND CHAIN CO, Rankin Station, Pa.

# **S**pecial Bargains.

3 66 in. Power, Back geared, Squaring Shears. Good order.

1 No. 4 Williams & White Bulldozer.

1 No. 4 Hercules Bulldozer.

1 80 in. Lathe, rod feed, triple geared.

### McDOWELL, STOCKER & CO.,

59 & 61 So. Canal St., Chicago.

READ CAREFULLY. Sale-Bargains

## Salo-Barsaln
40 H. "Otto" Gas Engine
20 H. "Otto" Gas Engine
10 H. Sterling, Charter Gas Engine
11 x 20 Slide Valve Engine
25 H. "Russell" Horizontal Steam Engine
26 H. Upright" Kriehbel "Engine
30 H. Horizontal Tubular Boller
26 H. Fortable Engine and Boller
36 H. Horizontal Tubular Boller
36 H. Horizontal Tubular Boller
36 H. Fortable Engine and Boller
46 H. Upright Engine and Boller
47 H. With March Boller
48 H. With Horizontal Tubular Boller
49 H. With With Horizontal Boller
40 H. "Murphy" Press.
40 H. "Murphy" Pressure Heater
40 H. "Moreschell" E. Heater
40 H. "Stockholm Boller
40 H. Stell Him Friction Clutch Pulley
40 H. X. 10 in. Steel Rim Friction Clutch Pulley
41 H. Firebox Horizontal Boller
41 H. Firebox Horizontal Boller
42 H. Enter Crank Engine
41 guaranteed
41 Arabox Machikery Co., 181 E. Division St., Chie PARADOX MACHINERY Co., 181 E. Division St., Chicago.

#### PARTIAL LIST OF SECOND=HAND MACHINERY IN STOCK.

ingle d Wat

RAINIER & WILLIAMS, 64 So. Canal Street, Chicago, Ill.

Mill Engines.

1 24 in. & 38 in. x 60 in. Tandem, Allis, Tangye

1 24 in. & 38 in. x 60 in. Tandem, Allis, Tangye frame
1 26 in. x 48 in. Allis Corliss, Right hand, condensing. Wheel 18 ft. dia., 32 in. face.
1 18 in. x 42 in. Allis Corliss Condensing, wheel 18 ft. diam., 22 in. face.
1 16 in. x 42 in. Allis Corliss.
1 11 in. and 19 in. x 24 in. Tandem Compd., Buckeye.
1 16 \(\frac{1}{2}\) in. x 25 in. x 15 in., Cross Compd. Armington & Sims.
1 18 in. & 30 in. x 16 in. Westinghouse comp'd.
1 10 in. x 12 in. x 16 in. Westinghouse comp'd.
1 10 in. x 12 in. Watertown Automatic.
1 12 in. x 13 in. N. Y. Safety
1 13 in. x 15 in. McIntosh-Seymour Automatic.
2 13 in. x 14 in. Watertown
1 15 \(\frac{1}{2}\) in. x 16 in. Safety
1 16 in. x 16 in. Ball
2 16 in. x 16 in. Cooper
1 18 \(\frac{1}{2}\) in. x 16 in. McIntosh-Seymour
2 40 in. x 72 in. International Power

2 40 in. x 72 in. International Power Co. Corliss Englines, Shafts 20 in. dia., 8 ft. between center of bearings. Wheels 24 ft. dia., 50 ton. 1 Right hand, 1 Left hand.

#### BOILERS.

# CONDENSERS.

1 600 H. P. Snow Condenser, 1 1000 H. P. Nordberg Condenser, 3 325 H. P. Davidson Condensers.

Rossiter, MacGovern & Co., Electrical and Steam Machinery.

141 BROADWAY, N.Y. Factory, Brooklyn.
SEND FOR CATALOG.

# Engine Bargains.

72 Providence Corliss.
72 Harmilton Corliss.
72 Harmilton Corliss.
48 Hamilton Corliss.
48 Hamilton Corliss.
42 Harris Corliss.
42 Harris Corliss.
42 Eullock Corliss.
42 Bullock Corliss.
43 Watertown Automatic.
43 O'ummer 4 valve Automatic.
45 Buckeye Automatic.
46 Mansfield Slide Valve.
16 Slide Valve.
18 Slide Valve.
18 Slide Valve.

are all in first-class condition and The above are all ady for shipment

A. L. DAWSON & CO., 27-81 W. Washington Street, Chicago, Ill.

# For Quick Delivery.

#### SINGLE VERTICAL PUNCHES

36 in. throat, 11/4 in. in 1 inch plate.

30 in. throat, ¾ in. in ¼ inch. 24 in. throat, ¾ in. in ¼ inch.

#### SPLITTING SHEARS.

For ¾ in. and ¼ in. plate.

DOUBLE ANGLE SHEAR for 4x4x% in. angles.

Plate-edge Beveling Shear, for ¾ in. plate. Gate Shear and Multiple Punch, 78 in.

BENDING ROLLS, 100 in., for 1% in. plate.

Hand Spacing Table, 8 ft.

Boiler Makers' Flanging Clamps, 10 ft.

Steam Riveter, 61/2 ft. gap.

Plate Planer, 6 ft. cut. Duplex Vertical Engines, 9 x 9.

HILLES & JONES COMPANY,

### Wilmington, Delaware. **BOILERS—ENGINE.**

2 60 in. by 22 ft. Boilers; have 18 6 in. flues and Hawley Down Draft Furnaces.
1 20 in. by 48 in. Hamilton Corliss Engine, with 18 ft. Band Wheel, 24 in. face. For Sale by

W. C. Johnson & Sons Mach'y Co.,

513-515 N. Second St., St. Louis, Mo.

# FOR QUICK SALE.

No 4 Clayton Duplex Air Compressor, 14 in. x 14 in. x 15 in., capacity 450 cu. ft. per min.

Double Rapid Bolt Cutters.

Single " " "
Double Solid Die Bolt Cutters.

Pointing Lathes.

Tappers.
46 in. x 17 ft. Engine Lathe.
2-Spindle Iron Table Shapers.

9 Speed Lathes.

### Geo H Bowler,

Williamson Bldg., Cleveland, O.

# Good Tools! Low Prices!

1 84 in. Triple Geared Engine Lathe

No. 5 Williams & White Bulldozer, Nearly New.

1 No. 3 Williams & White Bulldozer, Dble. End. 1 18 in. Traveling Head Shaper, 72 in. Traverse.

100-lb. Power Helve Hammer

1 No. 5 Root Positive Blower, Eng. Attached. 1 42 in Heavy Pattern Drill.

All second-hand, in good order.

Write for complete description.

We have a large stock-send us your inquiries.

WILLIAM A. READE & CO.,

216-217 American Trust Bldg., Cleveland, Ohio.

# Feed-Water

2nd-hand as well as new. All tested and guaranteed, BERRYMAN HEATERS aspecialty. Our prices will surprise a

e and please you.

F. L. PATTERSON, 186 Liberty St., N. Y.

# Second-hand Tools

# For Immediate Delivery.

1 800 lb. Merrill Drop Hammer.

1 14 in. x 60 in. Pratt & Whitney Shaping Machine.

1 12 in. x 60 in. Bement Shaping Machine.

1 10 Pratt & Whitney Tool Room Lathe.

1 No. 3 Stiles Punching Press.

1 No. 3 Fowler Press.

1 54 in. x 19 ft. Planer, double head.

1 60 in. Heavy Radial Drill, 5 inch spindle.

1 Small Horizontal Boring and Drilling Machine, Bement.

1 12 H. P. Otto Gas Engine.

1 No. 1½ Pratt & Whitney Hand Milling Machine.

1 No. 21/2 Newton Duplex Milling Mach.

1 No. 5 Cleveland Auto. Screw Machine.

1 Lodge & Davis Screw Machine, 2 in.

1 No. 2 Jones & Lamson Screw Machine.

1 36 in. Hydraulic Wheel Presses.

1 16 in. Slotting Machine.

# **U.Baird Machinery Co.**

124-126 First Ave... 123-125 Water St., PITTSBURGH, PA.

### BARGAINS.

1 15 x 5 Fox Lathe.

1 13 x 6 Young Engine Lathe.

1 14 x 5 Putnam Engine Lathe. 2 1 in. Wire Feed Screw Machines.

4 3/4 in. and 1/2 in. Wire Feed Screw Machines.

2 Tapping Machines.

2 Hand Millers.

1 Foot Lathe.

2 Speed Lathes.

#### J. E. COSTILO MACHINE WORKS,

Hudson Ave. and Concord St.,

BROOKLYN, N. Y.

#### MACHINERY BARGAINS.

Must be Sold at Once.

Must be Som ...

12 x 5 Reed Lathe.
14 x 6 L. & D., comp. rest.
14 (Screw Mch., Pearson.
14 In. Shaper, Walcott,
No. 0 Fay Band Saw.
10-ton Y. & Towne Pillar Crane.
Johnson Bulldozer.

Wanted—Power Press, capacity 24 to 90 tons.
THE RACINE MCH. CO.,
Racine, Wis.

# Where to Locate.

Manufacturers using iron, steel or wood will find the best locations for successful plants along the

#### SOUTHERN RAILWAY.

These locations lead in cheap raw material, cheap, contented and desirable labor, cheap fuel and in good facilities for marseting products. Opportunities for marseting products. Opportunities now open for establishing new plants are fine and should be investigated. Other investments will prove profitable in the South.

M. V. RICHARDS.

Land and Industrial Agent, Southern Railway, WASHINGTON, D. C.

### FOR SALE.

8, 30 ft. X SIL, WALL BOVAIRD & CO., Bradford, Pa. 8 Steam Pans, 20 ft. x 8 ft., with 31/4 in. Steam space

Harrisburg, Pa. An Ideal Shipping Point

Have you ever experienced the need of a central distributing point for the eastern field? Many manufacturers now carry stocks of goods here. The best located man often gets the trade. You can RENT Large, Centrally Located Warehouses with attendants, of us, or you can BUY our former plant (we now occupy our new factory), well located for manufacturing or warehouse purposes.

\*\*LARRISBURG FOUNDRY AND MACHINE WORKS\*\*

#### FOR SALE.

One Pond Planer, 36 x 36 x 17 ft.

One New Haven Lathe, 25 in. swing, 16 ft. bed.

One vertical Engine 14 x 14, roughtry valve, self contain.

One Sturtevant Steel Blower, 68 in. high, 26 inlet, 22 outlet.

Also one Atlas 10 x 12 Engine.

Also a large lot of iron tanks,

WM. ECKBOLDS' SONS. 711 E. Girard Ave., Philadelphia.

#### MACHINERY.

SECOND-HAND, FIRST- CLASS ORDER

SECOND-HAND, FIRST-CLASS ORDER

800 lb. Pratt & Whitney board lift automatic Drop
Hammer.
No. 7 Jarecki Pipe Machine.
Garvin Single Spindle Profiler.
14 ft. Boiler Plate Planer.
6 in. Boynton & Plummer Shaper.
22½ in. Barnes Drill, Back Geared.
16 x 16 x 4 ft. Hendey Planer.
32 x 32 x 9 ft. New Haven Planer.
13 x 32 x 9 ft. New Haven Planer.
14 in. Brown & Sharpe Sorew Machine, without wire feed.
16½ in. Screw Machine with Chard turret, Davis & Egan M. T. Co.
No. 1 Sensitive Drill Power Feed, Norton & Jones.
No. 3 Garvin Miller without arm, vise or vertical fixture.
No. 1 Cincinnati Full Universal Milling Machine.
Write us for any machinery wanted, or if you

Write us for any machinery wanted, or if you wish to exchange or sell.

C. C. WORMER MACHINERY CO., Ft. of Shelby Street, Detroit, Mich.

#### FOR SALE.

Four trains of plate rolls.
One 9 ft. Fly wheel, new 7 in. bore; weight,

One 9 ft. Fly wheel, new 7 in. bore; weight, 6,000 lbs.
One Rod Straightening Machine, built by the Medart Patent Pulley Co. for straightening Rods up to 3 in. diameter and 25 ft. long.
A lot of extra cold and hot plate rolls, new.

HENRY A. HITNER'S SONS. PHILADELPHIA. Gaul and Sergeant Sts.,

# FOR SALE.

18 in. x 48 in. Allis-Corliss Engine.
150 H. P. Cross-com. Armington & Sims Auto. Eng.
11 x 19 H. S. & G. Plain Slide Valve Engine.
12 x 19 H. S. and G. Plain Slide Valve Engine.
12 in. x 36 in. Babcock and Wilcox Auto. Engine.
12 in. x 16 Center Crank Slide Valve Engine.
16 in. x 24 in Atlas Plain Slide Valve Engine.
12 in. x 7 in. x 10 in. Worthington Duplex Pump.
1000 lb. Ferris and Miles Steam Hammer.
Also a number of smaller Engines and Pumps.

THE E. H. WACHS CO. 158 Indiana St., Chicago.

# FOUNDRY PLANT

for sale or rent. Large capacity; fully equipped and now in operation. Railroad facilities excellent; two belt and one trunk line. Outside Chicago.

Address "FOUNDRY PLANT," Care The Iron Age, 1205 Fisher Building, (hicago, Ills.

# FOR SALE. Power Plant, Cheap.

One Engine. Cylinder i6 in. by 30 in.; governor; 8 ton fly wheel (more or leas), 11 ft. dla., extra strong in section; band pulley 18 in. face, 8 ft. dis.

One Pierce, Stillwell Water Heater. 18 ft. of 3 in. Shatting, coupling and boxes. One Pulley, 12 in. face, 36 in. dis. One Pulley, 18 in. face, 30 in. dis. Stone foundation Capping. Sft. of extra double 18 in. Belting. One Holler, 16 ft. long, 60 in. dis.; 32 flues; steam drum 14 in. dis., 12 ft. long; water column; safety valve; front; breeching. Iron Chimney, 28 in. dis., 60 ft. long. One Pump and all connections full capacity for boiler. Will be sold very cheap.

A machine shop and boiler makers' statement will be given as to condition.

ALEX. RIEGLER, Central Brass Works, Cincinnati, Ohio.

Root Blowers Nos. ¼, ¼ 1, 2, 4, 5 and 6 Baker "Nos. 4, 4¼, 5 and 7.

ENGINES AND BOILERS.

 15 and 20 horse Vert. Greenfield Engines.
 horse Hoisting Engine, nearly new, cheap.
 horse Port. Engine and Boiler, complete. A. ASHER, 2d Floor, 109 Liberty St., 9

# Information for Machinery

ranted in every way. We cover all sales most extensive in the land.

#### WE OFFER THE FOLLOWING

#### ENGINES.

No. A 900 1 E. P. Allis Co. tendem compound condensing engine, H.-P. nominal 500, fly wheel 2 ft. diam. by 40 in. face; cylinders 22 and 42 x 48; guaranteed to operate on 15 lbs. of steam per indicated horse-power. This engine is in excellent condition. It is at present installed at Omaha, Neb. at pair Williams Aut. engines, coupled together, size 17½ x 24; revolutions 200; builders' rating 200; H.-P. 200.

No. A 902 1 horizontal tangve bed, side crank, Aut. steam engine, made by Russell & Co.

No. A 904 1 Wright Aut. Corliss, 23 x 36.
No. A 905 1 10 x 9 Westinghouse.
No. A 906 1 8 x 12 Lansing automatic.
No. A 907 1 7 x 12 Rice automatic.
No. A 908 1 16 x 24 horizontal box bed, side crank.
No. A 910 10 9 x 12 engines, manufactured by George W. Tifft & Sons of Buffalo,
N. Y.
No. A 911 1 10 x 22 box bed, right hand side crank.
No. A 912 1 10 x 26 leab Corlination of the side crank.

No. A 912 1 16 x 36 inch Corliss left hand. No. A 909 1 12 x 16 F. C. Wells horizontal, tangye

No. A 909 1 12 x 10 F. C. Wells including the bed, side crank.

No. A 913 1 9 x 16 Rice automatic.

No. A 914 1 11 x 16 x 16 McEwen tandem com-

No. A 914 I 11 x 16 x 16 McEwen tandem compound.

No. A 915 1 8 x 10 Atlas automatic, center crank.

No. A 916 1 11 x 18 Sinker, Davis & Co.

No. A 917 1 12 x 16 horizontal box bed, side crank.

No. A 918 1 10 x 14 automatic Wright & Adams.

No. A 919 1 12 x 12 high speed automatic Ideal.

No. A 920 1 20 x 24 box bed, balance valve.

In addition to the above we have on hand at all times a complete assortment of all size engines, ranging in power from 1 to 500 H.-P. Ask for our complete list.

#### BOILERS.

We still have on hand a few of Armour's 54 x 16, 60 x 16, and 72 x 18 horizontal tubular boilers. They are in excellent condition.

#### AIR COMPRESSORS.

No. A 921 1 duplex straight line Clayton, 9 x 9.
No. A 922 1 44 x 6 in. Clayton.
No. A 923 2 12 x 16. Will compress air up to 60
lbs. pressure with 80 to 100 lbs.
steam.

#### BELTING.

We carry at all times a complete stock of short-lap, double thick leather belting, both new and second-hand. Our quotations are always 30 per cent, below market values.

#### SHAFTING.

We carry a stock of all sizes

#### STEAM PUMPS.

Ask for our complete list of steam pumps. We have all kinds.

#### A COMPLETE OUTFIT.

A COMPLETE OUTFIT.

No. A 924 1 McEwen tandem compound engine.

8i x 14 x 12 with a direct-connected multipolar, compound-wound dynamo, capacity 50 kw. Incided in this outfit is a 100 H.-P. Sterling water tube boiler, with full front grate bars, &c. Also duplex steam pump and a copper tube heater. It was used about 24 years and replaced owing to a necessary increase in power.

Our Machinery Hall is 200 x 360 ft. Our complete list of items is contained

# CHICAGO HOUSE

W. 35th and Iron

#### UNUSUAL BUSINESS OPPORTUNITY.

Old established Grey Iron Foundry and Machine Shop, near New York City, has vacancy for practical man as Superintendent, who can invest \$10,000 to \$15,000 to

Apply, stating experience, etc., to "GREY IRON," care The Iron Age, New York.

#### For Sale or on Royalty.

A patent for the manufacture of automatic bank vaults and jail cells, manufactured of ordinary gas pipes and operated with compressed air, from which any number of alarms will be turned in at any distance if drilled, blown or broken. For particulars address

J. RUMPEL, Weston, Mo.

#### FOR SALE.

Car of Scrap Steel in barrels; principally saw gummings. SOUTHERN SAW WORKS, Atlanta, Georgia.

We are headquarters for rebuilt motive power. Our Machinery is absolutely warby a binding guarantee. Our stock is the

#### SUBJECT TO PRIOR SALE:

#### DYNAMOS, ETC.

DYNAMOS, ETC.

1 500 light National, 1000 volt, alternating exciter, attached to shaft, complete with sliding base regulator and pulley, in first-class condition. Full description on application, also photograph.

1 Thomson-Houston, 400 light, compound-wound dynamo, new, 110 volts, 200 amperes, complete with sliding base, belt tightener and regulator.

1 Thomson-Houston, 500 light, compound-wound.

MISCELLANEOUS.

1 5-inch Judson governor.

1 5-inch Judson governor.

1 Worthington water meter.

1 500 H.-P. Excelsor feed water heater.

1 bench polishing machine, hight from bench to center of spindle 9 inch., diam. of spindle between flanges, 1, 1½, 1½ or 1½ inch.

1 grinding machine with two speed pulleys designed to run two emery wheels up to 16 in. diam.

1 grinding machine as above, up to 18 in. diam.

1 grinding machine as above, up to 20 in. diam.

1 45 light Schuyler arc light dynamo.

1 spur gear, 12 ft. diam, 16½ in. face, 5½ in. pitch.

No. 4 Pulsimeter pumps.

1 iron planer 18 in., bed 5 ft. 6 in. long.

1 iron planer 17 in., bed 5 ft. 6 in. long.

# LATHES. We have a large stock of brand new lathes of l kinds. Ask for our complete list.

BLACK WROUGHT IRON PIPE. We purchased at sale, 750,000 feet of brand new standard black wrought from pipe, ranging in size from \(\frac{1}{2}\) to 10 in. Our complete list and low quo-tations will be sent on application.

in Catalogue No. 78.

# WRECKING CO.,

Sts., CHICAGO.

TO MANUFACTURERS OF ALL KINDS OF

#### IRON GOODS, TOOLS, MACHINES, Etc.

A German house of good standing and best reference, established 10 years, offer their services as sole agents for Germany and Northern Europe. Well acquainted with the home and export trade. Samples paid for if desired, and are prepared to pay cash for all goods ordered. A representative of the house is temporarily in New York on Government business. Address

"TEUTONIC." care The Iron Age, New York.

#### SPECIAL BARGAIN.

fust be sold before Nov. 15th. erracute No. 125 Geared Drawing Press. arrell No. 2 Geared Arch Drawing Press. LOUIS DRESCHER, 207 Centre St., New York.

#### WANTED.

A Vertical Boring Mill that will accommodate work not less than 60 inch diameter. THE ALBRO-CLEM ELEVATOR CO., 7th St. and Gienwood Ave., Philadelphia.

#### WILL PURCHASE INTEREST

with active services in manufacturing company making metal goods, machinery or factory equipment, or will represent such company in New York City. Address "R. D. W.," Caro The Iron Age, New York.

# USEIS WHERE TO LOCATE?

# Louisville and Nashville Railroad.

Great Central Southern Trunk Line.

- IN -

#### KENTUCKY, TENNESSEE, ALABAMA. MISSISSIPPI, FLORIDA.

- WHERE -

Farmers, Fruit Growers, Stock Raisers, Manufacturers, Investors, Speculators, and Money Lenders

will find the greatest chances in the United States to make "big money" by reason of the abundance and cheapness of

Land and Parms,

Timber and Stone.

Iron and Coal,

Labor-Everything

Free sites, financial assistance, and freedom from taxation for the manufacturer.

Land and farms at \$1.00 per acre and upwards, and 500,000 acres in West Florida that can be taken gratis under the U. S. Homestead laws, Stock raising in the Gulf Coast District will make enormous profits.

Half fare excursions the first and third Tuesdays of each month.

Let us know what you want, and we will tell you there and how to get it—but don't delay, as the ountry is filling up rapidly.

Printed matter, maps and all information free.

Address

R. J. WEMYSS,

General Immigration and Industrial Agent, LOUISVILLE, KY.

# \$25,000 WILL BUY CONTROLLING INTEREST

In manufacturing concern, Small Hardware. Inventory showing net assets of over \$50,000. City of 100,000. Incorporated 35 years. High reputa-tion. Exclusive control of Several Patents. Machinery, Equipment, Dies, Tools, Lathes and Presses, all modern and up-to-date. No indebtedness. Business can be conducted in present location, or moved at small expense to a Western City, or amalgamated with other business, Saddlery or Builders' Hardware. President and General Manager in control, overworked and out of health, desires to retire. Excellent opportunity for established manufacturer to enlarge and increase busi ness, or for father desiring to establish son in old established business. Principals only. Address in confidence

"NEW ENGLAND MANUFACTURER," care The Iron Age, New York.

# FOR SALE.

ENGINES, AUTOMATIC.

1 12 x 20 Atlas. 4 11 x 11 Westinghouse.

ENGINES, SLIDE VALVE.

1 16 x 24 Boyard & Seyfang. 1 10 x 10 Russell, High Speed.

#### BOILERS.

BOILERS.

1 72 x 16, 3/4 in. flues.
2 72 x 14, 4 in. flues.
1 50 H. P. Upright.
1 12 in. Shaft, 24 ft. long, with couplings.
1 13 in. Shaft, 24 ft. long, with couplings.
Tubing, Rods and Oil Well Casing.
Second-hand Flues, all sizes, cleaned and cut to length.
100,000 ft. Standard Flpe, all sizes.
1 500 light Electric Machine.
1 50 H. P. Geary Water Tube Boiler.
1 Large Lot Pumps, different sizes.

McDOWELL & CO.,
317 Fifth Ave., Pittaburg, Pa.

347 Fifth Ave., Pittaburg, Pa.

#### WANTED.

21-in. Turret Lathe; & in. Vertical Boring Mill; 20-in. Drill; No. 2 Milling Machine; 14 in. Brass Finishing Lathe. Must be cheap, good, second-hand tools.

NORTH WESTERN SUPPLY CO., Duluth, Mins.

#### FOR SALE.

SPECIAL ENGINES.

in. x 20 in. (Vertical) Silde Valve.

in. x 30 in. Keystone Corliss (Brand new).

in. and 19 in. x 24 in. Tandem Comf.

Buckeye '(latest type) with condenser.

22 in. x 42 in. Wetherill Corliss.

33 in. x 48 in. Geo. H. Corliss make.

24 in. x 36 in. Macklutosh, Hemphill & Co.

36 in. x 60 in. Tangye Bed type.

Crane Elevator Co. Modern Elevator Engine.

orizontal Tubular, 72 in. x 16 ft., with 84 31 tubes, approved for 100 lb. pressure, com-

SHAFTS and PILLOW BLOCKS.

Very fine forged Shafts, finished all over, 10 in. diam. to 16 in.

FLY WHEELS. For Balance and for Belts.

SMOKE STACK.

y fine steel self-supporting stack, 64 in. diam 100 ft. high, with base casting, ornaments top and ladder.

#### HAMMERS.

Hackney Cushion Hammer. 1200 lb. Double Frame Steam Hammer. 4 ton do.

ew Alligator Shear with capacity up to 21 in. Cold Billets, or for Scrap cutting. Knives 14

#### LOCOMOTIVES, New and Second-Hand.

Signifies Right-hand, Signifies Left-hand.

#### B. M. EVERSON.

German Nat. Bank Bldg. (6th and Wood), PITTSBURG, PA.

Sales Agent for Baldwin Locomotive Works, Phila.

#### CUPOLAS, CRANES, LADLES, BLOWERS,

and all other Foundry Equipment, new and second-hand. Send us list of your

The J. D. Smith Foundry Supply Company, CINCINNATI, O.

### FOUNDRY FOR SALE OR RENT.

A modern Foundry completely supplied with upto date equipment, with a capacity of 12 to 17 tons
daily, with a limit of 5 tons in one piece.

Best of light, and conveniences for high grade
work, located in one of the best manufacturing
centers in the Middle States.

The entire Foundry Equipment will be sold and
the building leased for a term of years. Or the
Equipment and building will be leased for a term
of years at reasonable rates.

This is an unusual opportunity for parties to enguge in Foundry business, as the Foundry has a
good run of trade.

Parties desiring to manufacture a line of Hot
Water or Steam Heaters, Radigtors, or any line of
work using castings, would find this an excellent
opening, as much of the present trade could be
retained if desired. Address in confidence,

"MODERN FOUNDRY."

"MODERN FOUNDRY,"

Care The Iron Age. New York.

### Foundries for Sale.

Foundry site with excellent water power at Medi-na, N. Y.

Fine foundry buildings at Allentown, Pa., with railway siding.

Fine foundry buildings at Sing Sing, N. Y., with rail and water facilities. Address "NASSAU,"

care The Iron Age. New York.

# FOR SALE.

Entire plant for manufacturing WOVEN WIRE FENCING, consisting of patent and looms for making railroad, farm, garden, hog fencing and poultry netting of a new Also raw and manufactured style. stock on hand if desired. Address

"WOVEN WIRE,"

care THE IRON AGE, New York.

#### WANTED.

To represent manufacturers of Staple or Heavy Hardware, Iron or Steel, Nuts and Bolts, &c., &c. Either by carrying a stock in New York City, or by selling direct from factory. Located in the centre of the Hardware district, we have ample storage room, office and large sales room on GROUND door. Address CHAS. J. STEBBINS & CO., 103 Reade Street, New York City

# BARGAINS.

1 No. 1 Brown & Sharpe Universal Milling Machine. 1 Semi-Universal Miller, Worcester Machine Co.

124 x 24 x 6 Gray Planer, new.

 $1.26 \times 26 \times 8$  Planer.  $1.18 \times 18 \times 5$  Planer, with chuck.

1 16 in. D. T. q. Gould & Eberhardt Shaper.

1 12 in. Shaper, heavy machine, Michels. 1 36 in. heavy Bk. Gd. Drill, Massinet Mfg. Co

120 in. Back Geared Drill Press and Chuck, Davis. 113 in. Sensitive Drill and Chuck, W. & R.

2 No. 2 Garvin Screw Machines.

1 Gray Screw Machine.

1 13 in. x 6 ft. bed, No. 6 Barnes Engine Lathe.

1 24 in. x 16 ft. Engine Lathe.

1 24 in. x 12 ft.

2 24 in. x 10 ft.  $220 \times 8$  Engine Lathe, chain feed, \$30.00.

118x8 Michels 56 6.6

116 x 6 1 15 x 6 Star Tool Co Pratt & Whitney.  $1.14 \pm 6$ 66

1 Graves Hydraulic Elevator and Car, complete, capacity 3,000 lbs.

12 x 3 Gould Triplex Power Pump.

1 No. 0 Knowles Single Acting Steam Pump.

#### BARGAIN IN POWER PLANT.

1 100 H.-P. Sterns Tubular Boiler, complete, flush front, fitted with Hawley Down Draft.
1 70 H.-P. Phila. Corliss Engine.
Above outfit complete with all valves, piping separator, heater and pan under fly wheel.
All in fine condition, but little used.

MACHINISTS' SUPPLY CO., Rochester, N. Y.

#### FOR SALE.

#### One Hundred Open Top Square Iron

Tanks. Mounted on wheels. Capacity of each, 22 cubic feet, or 166 gallons. For blue prints and prices send to

77 Haverhill St., Boston.

# Manufacturing Site To Lease.

All or part of plot, 200 feet front on Railroad Street, near 25th Street, by about 880 feet in depth, also River Front, and having connections to both Allegheny Valley Railroad and Pittsburgh Junction Railroad. For long or short term.

W. J. CARLIN COMPANY,

610-611 Lewis Bldg., Pittsburgh, Pa.

#### FOR SALE.

\$10,000 stock of hardware. The best town in Southern Michigan. Address "HARDWARE," care The Iron Ag\*, 1205 Fisher Bldg., Chicago, Ill.

#### FOR SALE.

#### Tools lately in use in Boiler Manuf'g Plant.

1 40-ton 36 in. Gap Hydraulic Portable Riveter. 1 set 20 ft. Niles Rolls. 1 13 in. x 22 in. x 13 in. Westinghouse Engine 1 18 in. x 55<sub>4</sub> in. x 18 in. Barr Pump for 500 lbs. pressure.

For additional information, address

ESTATE OF WM. G. WARDEN, 1012 Witherspoon Bldg., Philadelphia,

#### WANTED.

A working interest in a gray iron foundry, or some iron industry. Can invest \$15,000.

"B. K., 1025," care The Iron Age, New York.

### Alligator Shears Wanted.

To cut 41/2 in. square iron cold. Must be in good

PHOENIX HORSE SHOE CO., Joliet, Ill.

#### FOR SALE.

Combination Ice and Roller Skate Dies Patent for Elevator Stop and Lock. Patent for Elevator Gate and Bar. Send for our list of patents.

P. O. BOX 2294, Boston, Mass

#### FOR SALE.

One 2000 lb. Single Frame Steam Hammer
W. J. CARLIN COMPANY,
610-611 Lewis Bildg., Pittsburg, Pa.
NEW YORK OFFICE:
514-515 Park Row Bildg., New York, N. Y.

### ASSIGNEE'S SALE

# ROLLING MILL

# CUT NAIL FACTORY.

By virtue of a decree of the Court of Common Pleas of Centre county, there will be exposed to public sale at the Court House in the borough of Bellefonte, on

#### TUESDAY NOVEMBER 27, 1900, At 2 o'clock P. M.,

At 2 o'clock P. M.,

All those several parcels or tracts of land, seven in number, specifically described in the deed from the Bellefonte Iron and Nail Company to the undersigned, as assignee, recorded in Miscellaneous Book "K," page 62, containing in the aggregate about twenty-two acres, fronting on Spring Creek and the Bald Eagle Valley Railroad, having a frontage of nearly half a mile on the latter, on which are erected a rolling mill, nail factory, warehouse and other buildings connected therewith. The capacity of the rolling mill is about fifty tons per day. There are fourteen puddling furnaces, three heating furnaces, rotary squeezer, fourteen inch train, extra rolls, etc. The nail factory contains fifty three nail machines, of which thirty are equipped with self-feeders, and has all the ordinary appliances and conveniences for the manufacture of cut nails. The property is in good condition and cost originally about \$180,000. It is within a few rods of the Central Railroad of Pennsylvania and can be easily connected therewith, giving an outlet either by the Pennsylvania system or by the Reading and New York Central systems east, west and north The furnaces in the neighborhood furnish sufficient mill iron to keep the mill employed and the advantages in the saving of freightet, together with the low price of coal, constitute in themselves a fair profit over ordinary conditions, TERMS OF SALE:—Ten per cent, in cash at time of sale; one half of the balance at the confir-

TERMS OF SALE:—Ten per cent. in cash at time of sale; one half of the balance at the confirmation of the sale and the remainder in one year thereafter with interest, to be secured by bond and mortgage. Detailed information furnished by the undersigned.

THE COMMONWEALTH GUARANTEE, TRUST AND SAFE DEPOSIT COMPANY,

Harrisburg, Pa

Peru, Indiana

Assignee of the Bellefonte Iron and Nail Company.

#### WANTED.

Two second-hand broad gauge cinder kettles of Weimer or Hartman type. Address with description and price,

E. W. PORTER,

38 Manhattan Building, Philadelphia.

#### TO MANUFACTURERS WISHING CONSOLIDATION.

A company with ample facilities, in order to operate its plant to full capacity the entire year, wishes to absorb, by consolidation or otherwise, one or two large companies manufacturing in iron or wood. Request the correspondence of principals only. principals only

" P. O. Box 533," Chicago.

### FOR SALE.

One Westinghouse Compound Engine, 110 H.-P., omplete with pulley, etc.

One Slide Valve, Box Bed Engine with 10 x 22 cylinder, 12 in. x 6 in. pulley.

Both of above are in first-class condition, and re replaced with one large engine THE INDIANA MANUFACTURING CO.

#### FOR SALE. FOR CASH-NO TRADE.

A clean stock of hardware, tinware, stoves, paints, oils, glass, etc., best location on main street in northwestern city of over 31,000, showing an increase in population of 160 per cent. in last ten years. Stock about \$20,000 Sales for 1899 \$80,000. Will be that or more for 1900; have the best business in the city, no better business prospect in the United States. Good reasons for selling. Address "RARE CHANCE." care of Iron Age, New York.

# FOR SALE.

Corliss Engine, 14 x 36, with balance wheel 9 ft. x 21 in. In excellent order, but is to be replaced with a larger engine. Can be seen running.

WILEY & RUSSELL MFG. CO., Greenfield, Mass.

# Water Pipe FOR SALE.

About 15,000 feet 20 in. Cast Iron Water Pipe made by R. D. Wood & Co., 170 lbs. to foot, in 12 ft. lengths, in first-class condition for re-use.

Will be sold in lots to suit.

FRANK SAMUEL, Harrison Bldg., Philadelphia, Pa.

#### BERKSHIRE IRON YARD. M. H. ROGERS, Owner.

# Scrap Iron, Metals, Etc.

221-223-225 Housatonic Ave., BRIDGEPORT, CONN.

WANTED.

Give description and lowest spot cash price delivered Phila., Pa.

F. GREINER, 406 Drexel Building, PHILADELPHIA, PA.

# Wagon Tires,

STEEL OR IRON. RD. EDGE OR SQUARE.

### Angles Up To Four Inch. LOGAN IRON & STEEL CO.,

BURNHAM, PA.

Buyers of Scrap for Cash.

I buy Iron and Metal Scrap and wish to hear from anybody having cotton ties. pipe, hoops, cast borings, wrought and steel turnings, boilers, cast scrap, etc. Also wrecks from fire, etc.

ROBERT M. CUNLIFFE, 1140-42 Washington Ave., Phila., Pa.

STREET, gents, for 61 Iron

FOR IMMEDIATE DELIVERY. Scrap Iron, Steel and Metals Angles, Beams. Channels, Plates, Tees, Zees, Bars.

Moderate 5000 tons in stock. prices. Send for stock sheet and quotations.

#### STRUCTURAL DEPARTMENT, ILLINOIS STEEL CO.,

Designers, Manufacturers and Erectors of Structural Iron Work, Dealers in Structural Materials.

50 Wabansia Ave.,

CHICAGO.

4,000 tons 60 lb. steel relaying rails, with angle bars. 2,000 tons McKenna re-rolled steel rails, 55-56 lb. and lighter sections.

400 tons 56 lb. steel relaying rails with splices. One mile 40 lb. steel relaying rails with splices.

> ISAAC JOSEPH IRON CO., Swift Bldg., CINCINNATI, OHIO.

CHICAGO, ILL. SAVANNAH, GA

#### SECOND-HAND RAII

Car load 12 tons 35 lb. Steel Rails. Hunt's inspection at \$25.00 per ton

M. SAMUEL & SONS,

Kent Ave. and North 2d St., Brooklyn.

Washington and Bethune Sts., New York.

# BEAMS, CHANNELS, ANGLES, PLATES.

Eye Beams, from 4 ins.  $(7\frac{1}{2} \text{ lbs.})$ , to 20 ins. (65 lbs.)by Beams, from a list, (17 sterly)
Channels, from 4 ins. (5½ lbs.), to 15 ins. (33 lbs.)
Angles, from 1½ ins. x 1½ ins. x 3-16 in. to 6 ins.
x 6 ins. x ½ ins. x 2 ins. x 3-16 in. to 6 ins.
x 4 ins. x ½ ins. x 2 ins. x 3-16 in. to 6 ins.
x 4 ins. x ½ in.
Zee Bars, 3 ins., 4 ins. and 5 ins.
Plates. 1½ ins. and over.
All material in 50-ft. lengths, or cut to specified lengths if desired. Send for detail stock list.

All material in stock, and will be shipped immediately on receipt of order.

Quotations subject to prior sale.

THE FOREST CITY STEEL & IRON CO.,

Cleveland, O.

#### WANTED. Scrap Iron and Steel.

Correspondence Solicited. C. Botjer, 405 Newark St., Hoboken, N. J.

#### FOR SALE.

A large assortment of iron and wood working machinery, consisting of lathes, planers, shapers, drill presses, bolt cutters, power hammers, moulders, surfacers, planers and matchers, joiners, universal woodworkers, rip and cross cur saws, swing cut off saws, boring and mortising machines, sanders, hangers, shafting, pulleys etc.

R. S. ARMSTRONG & BRO., Atlanta Ga

# RELAYERS FOR SALE. Prompt Deliveries.

Standard and light sections subject to inspection.

Only prime relayers handled by this firm.

Delivery Chicago, St. Paul, Kansas City, El Paso,
Texas, Washington, D. C., and other points. For further information write to

BLOCK-POLLAK IRON CO.,

923-925 Marquette Bldg., Chicago.

# New Jersey Iron & Metal Co... PATERSON, N. J.

Write us when you have Scrap to dispose of

#### Scrap Iron, Steel and Iron Rails

bought and sold by

M. J. & M. BLAKE,

10th Ave. and 15th Street,

New York City

Telephone Call, 897 18th St.

#### JOHN LEONARD & CO. IRON AND STEEL SCRAP.

IRON AND STEEL RAILS, PIG IRON, ETC. 220 Broadway.

ST. PAUL BUILDING.

NEW YORK

TELEPHONE, 975 CORTLANDT.

Correspondence Solicited.

#### The Morton B. Smith Co., 243 FRONT ST., NEW YORK.

OLD METALS description purchased for

SCRAP IRON and STEEL

Correspondence solicited.

E. O. Miles, President. J. W. Russey, Manager.

# Scrap Iron and Old Metals.

ATLANTA JUNK CO.,

278 to 298 Marietta St., Atlanta, Ga.

CORRESPONDENCE SOLICITED FROM BUYERS AND SELLERS.

#### FOR SALE RELAYING RAILS, Etc.

145 tons 45 lb. Steel, with Splices. 50 tons 30 lb. Steel, with Splices. 100 Box Cars, 50,000 lbs. capacity 20 Flat Cars, 50,000 lbs. capacity

MAY & SPALDING.

Atlanta, Ga.

#### FOR SALE. Relaying Rails.

35 tons of 35 lb. steel, with splices. 860 tons of 50 lb. steel, with splices. 500 tons of 56 lb. steel, with splices. Tidewater delivery.

THE STEEL RAIL SUPPLY CO., New York City. 100 Broadway

WANTED.

Give description and price delivered our yard, Pottstown, Pa.

Donaldson & Newton, 421 Chestnut St., Philadelphia, Pa.

# SCRAP IRON or STEEL WANTED.

E. B. LEAF & CO., 820 Real Estate Trust Bldg., Philadelphia, Pa.

# E. BISSELL & CO.,

WHOLESALE

### HARDWARE AUCTIONEERS.

12 Murray St. and 15 Park Place, N. Y. Sales held weekly for the trade. Consignments solicited. We refer to the leading manufacturers and importers.

# FOR SALE.

We have lately purchased the site of the Pacific Rolling Mills in San Francisco and are now equip-ping same with a modern shipbuilding plant. In consequence, we have on hand and for sale, at a low price, the following:

one Sinch, one 19 and one 12 inch Suide Mill, each complete with housings, guides, boxes, carriages, brasses, clamp bars, wongs, etc., etc., with full sets of roughing and finishing rolls.

One 18 in. Bar and Rail Will.

One 28 in. Beam Molling Mill.

Also with full sets of Rells for each mill.

o one Roll Turning Lathe, double header, for turning two rolls at same time. Bed 42 feet long by 5 ft. 6 in. inside way. Swing 3 ft. 9 in.

Feur Tool Rests.

Four Roll Neck Rests.

Two Clutches for driving work.

In first-class shape with necessary tools for

same.

Acido one Roll Turning Lathe, double header; turns rolls 6 in. to 18 in. inclusive, two at same time. Wood Frame, A feet long and feur feet ix inches wide. Swing 4 feet. Iron guides. Tool rest and carriage fastened to wood foundation. Chracks for all sizes of rolls. Tools, countershafts, etc., all complete.

"We have also quite a number of boilers and engines that have been used throughout the rolling mill, which we will sell at a low figure. Write and send for circulars.

#### RISDON IRON AND LOCOMOTIVE WORKS.

San Francisco, Cal.

#### NOTICE.

Party owning factory site, land and buildings, desires some company making good paying specialty to locate on same, with a view to taking an interest in the business. Address

LOCK BOX 572, New Castle, Pa.

#### WANTED.

rge quantities. Address L. HUGH O'DENNELL, Washington, Indiana.

#### WANTED.

Ferro Silicon, ever 12 stiticon and under 1% carbon Also Molybdenum, Chrome and Tungsten Ores. THE ASAX METAL COMPANY, Philadelphia, Pa.

# Help Wanted.

Undisplayed Advertisements for Help Wanted not exceeding fifty words, including address. One Bollar each insertion. Additional mords two cents oach.

Original letters of reference should not be inclosed with replies to adver-thements appearing in these col-amos, as they are frequently mistaid and dost. A copy of the reference will serve the purpose.

DRAFTSMAN.—An all around man on Corlins engine work; also one skilled in the designing of all kinds of saw mill machinery; state age, experience and references. Address "E. S. M.," care The Iron Age, New York.

WANTED.—SALESMEN visiting the hardware and mill supply trade (or manufacturers direct) to sell a staple article as a side line for a liberal commission; correspondence solicited with manufacturers' agents in all cities of the United States and Canada. Address "Staple Article," care The Iron Age, New York.

WANTED.—A SUPERINTENDENT for a small but ambitious structural steel works; must be experienced in getting out and erecting general building iron work; must be a hustler able to crowd workmen and machinery to the fullest capacity; to a satisfactory man big wages will be paid. Address James H. McGill, Washington, D. C.

SALESMEN for Iowa, Indiana and Illinois to sell a complete line of coal and wood ranges and heaters, gas, gasoline and oll stoves, ovens and sheet iron goods for a large manufacturing company: none but first-class, capable men. thoroughly conversant with the above lines, need apply. Address "1901," care The Iros Age, New York.

WANTED.—A first-class METAL MIXER. thoroughly competent to take entire charge of a brass foundry. Address "Ferrum," care The Iron Age, New York.

WANTED.—CHEMIST as assistant in open hearth steel foundry, familiar with the analysis of iron and steel; state age, experience and compensation expected. "A. T. B.," care The Iron Age, New York.

WANTED.—A man to take charge of range oller shop; state experience and salary to Range Boiler," care The Iron Age, New

WANTED.—An ASSISTANT SUPERINTENDENT of a large foundry and machine shop; applicant must be active young man of experience, highest character and familiar with modern methods; lucrative position with good prospects for right man. Address "Ability, 111," care The Iron Age, New York.

WANTED.—An expert SHOP COST ACCOUNTANT to organize new system in foundry and machine shop; must come well recommended and have good record; state age and experience in application. Address "Gears," care The Iron Age, New York.

WANTED.—Middle aged man of prepossessing appearance to travel in the New England, Eastern and Middle Western States with a specialty; a good chance for one who is capable to handle the manufacturing trade and can figure on jobs for small gray from castings as well; references must accompany application to receive proper consideration; only those having experience in foundry line need apply. Address "F., 111," care The Iron Age, New York.

WANTED.—FOREMAN for machine shop employing about 40 men; must be a thoroughly competent, experienced and capable man, familiar with drawings and capable of estimating machine work and directing work in shop; shop is well equipped and pleasantly located in a city of 50,000 in Eastern Ohio; line of work is principally contract and job work and a few specialties; state fully experience, age, salary expected and name past employers. Address Box 25, The Iron Age, Hamilton Bullding, Pittsburgh, Pa.

WANTED.—A practical rolling mill man, one thoroughly competent to operate an 18-inch plate mill; state nationality, previous experience, age, salary wanted and other information to the point. Address "E. W. P.," care The Iron Age, New York.

TRAVELING SALESMEN for every State and Territory in the Union to sell a new article as a side line to hardware and house furnishing goods trade: good commission, Address Box 298, Dubuque, Iowa.

Experienced HARDWARE or CUTLERY SALESMEN who thoroughly canvass one or two of the following States: Pennsylvania, Michigao, Indiana, Illinois, Kentucky, Missouri, Kansas, Colorado, Montana and coast, to take a side line of miscellaneous cutlery, butcher, putty and kitchen knives, &c. Address "Big Cut," care The Iron Age, New York.

Experienced SUPERINTENDENT for fan motor factory; must be expert mechanic and good handler of men; state experience, salary desired and give reference. Address "English Factory," care The Iron Age, New York.

Liberal inducements to SALESMEN to sell mechanical goods to dealers and manufacturers in New England, New Jersey, Maryland. Virginia and Delaware, Address "Liberal," care The Iron Age, New York.

### Situations Wanted

Undisplayed Advertisements for Situations Wanted not exceeding twenty-five words, including ad-dress, Fifty cents each insertion. Additional words two cents each.

NEW YORK AGENCY WANTED; will represent concern manufacturing machinery factory supplies or equipment; young man now employed; eight years' experience. Ad dress "R. D. W.," care The Iron Age, New York.

A young man with 13 years' experience in the hardware manufacturing and jobbing business, both in selling and general management, seeks a new connection where such experience can be utilized. Address "1211 L.." care The Iron Age. New York.

SALESMAN.—Man with 20 years' experience in light and heavy hardware: 10 years on the road: best references. Address "H. L. H.," care The Iron Age, New York,

As FOREMAN of light machinery, architectural or agricultural foundry; fully understand the most economic way of running foundry, either piece or day work and the mixture of irons; strictly non-union: 15 years' experience as foreman; good reason for wishing to make a change; Al reference. Address "L. M. F., 118," care The Iron Age, New York. Address " New York.

Expert FACTORY SALESMAN, possessing wide acquaintance among jobbing and large retail buyers, is open for engagement January 1. Address "Factory Salesman," care The Iron Age, New York.

Single man, 42 years, well acquainted in Mexican and South American States, to travel and take charge of agency; best references; acclimated. Address "Agency," care The Iron Age, New York.

A position as MANAGER or MANAGING SUPERINTENDENT in a tin plate manufacturing works; a good mechanic; a thorough knowledge of the business in all its details; also a good bookkeeper; had many years' experience; good references. Address "T. P. W., No. 118," care *The Iron Age*, New York.

HARDWARE BUYER, young, thoroughly posted, 20 years' experience leading jobbers, wants position with progressive house where ability 's appreciated. Address "Posted," care The Iron Age, Fisher Building, Chicago, III

Man having ten years' experience in iron and steel business desires position as OFFICE MANAGER. CORRESPONDENCE CLERK or SALESMAN: thorough accountant; best reference. Address "Bert," care The Iron Age, Hamilton Building, Pittsburgh,

WORKS MANAGER, 45, technically educated, of sound record in iron, steel and machinery, will be open to engagement soon: wholly reliable; able to stop leaks and strengthen dividends. Address "C. E., No. 118," care *The Iron Age*, New York.

A thoroughly competent hardware, stove and expert cutlery man, now traveling and with years of experience in the Texas trade, will be open January, 1901, for engagement; references exchanged and correspondence solicited. Address "Texan," care The Iran Age, New York.

An Iron merchant and agent living near Birmingham, England, who has a good connection with users of pig iron, steel billete, blooms, tin plate, bars, &c., will be glad to take up sale in Great Britain for American makers. Apply Joseph Hammond, Stourbridge, England.

Experienced mechanical engineer on machine tools and general machinery and furnace work desires change as ASSISTANT ENGINEER, DRAFTSMAN or TRAVELING SALESMAN; technical education; location desired, New England or Middle States. Address "V. K. E.," care The Iron Age, New York

POSITION WANTED by first-class IRON d STEEL CHEMIST; best of references. ddress "Chemist 1011," care The Iron Age, and STEE Address " ( New York.

WANTED.—To represent manufacturer in Cleveland and Pittsburgh district; Iron, steel or kindred lines; have acquaintance, experi-ence and am located. Address 1430 William-son Building, Cieveland, Ohio.

MACHINERY SALESMAN desires change: well balanced combination of engineering skill and commercial tact; can take charge of engineering department; up with the times; steel or wood construction, steam plants, power transmission, elevating and conveying machinery; want responsibility. Address "Versatile," care The Iron Age, New York.

An industrious ROLL TURNER is open for a situation: a capable, sober and ener-getic man. Address "Roll Turner," care The Iron Age, Hamilton Building, Pittsburgh, Pa.

Experienced engineer, 33 years old, college graduate, desires SELLING AGENCY or position as LOCAL AGENT in New York City for manufacturing concern of high standing; compensation in salary or commissions; highest references. Address "Agent,' care The Iron Age. New York.

A man with 10 years' technical and 20 years' commercial experience in production of iron and steel desires connection with some company in that line, preferably as secretary and treasurer. Address "X., 1018," care The Iron Age, New York.



# THE IRON AGE

HAS BEEN AWARDED A

# GOLD MEDAL

AT THE

# PARIS EXPOSITION, 1900

SILVER MEDAL, PARIS, 1878
SILVER MEDAL, PARIS, 1889
HIGHEST AWARD, CHICAGO, 1893

# THE LATEST BOOKS.

- The Reciamation of Land from Tidal Waters. A hand book for engineers, landed contributions and others interested in works of recsmation. By Alex. Beazeley, M.I.C.E. Illustrated, ed. cloth. \$4.20
- The Design and Construction of Oil Engines.

  with full directions for erecting, testing, installnog, running and repairing, including descripchans of American and English kerosene oil engenea. By A. H. Goldingham, M.E. Illustrated.
- The Naval Architect's and Shipbuilder's Pocket Book of Formulæ, Ru es and Tables; and Engineer's and Surveyor's Handy Book of Reference. By Clement Mackrow. Seventh edition. Illustrated. 16mo. limp leather.....\$5.00
- Machinery for Refrigeration. Being sundry observations with regard to the principal apply ances employed in ice making and refrigeration, and upon the laws relating to the expansion and compression of gas-s; principally from an Australian standpoint. By Norman Seife. Illustrated, 116 pages, coth. \$3.50
- Free Hand Perspective. For use in manual training schools and colleges. By Victor T. Wilson, instructor in Drawing in Cornell University.
- Linear Perspective. A practical hand book for architects, civil and mechanical engineers, designers, builders, masons, machinists, carpenters and p-inters, etc. By Herman T. C. Kraus, C.E. Oblong, cloth. price.

- An alyses of Pig Iron. Containing information for foundrymen relative to the effect produced on castings by various constituents of iron; an article on the grading of pig iron; and many analyses of brands of pig iron from the various sections of the U.S. and from foreign countries. By Seymour R. Church. 173 pages. 4to, leather. \$2.50
- Elements of Glass and Glass Making. A treatise designed for the practical glass maker, comprising facts, figures, recipes and formulas for the manufacture of glass—plain and colored, With an appendix containing useful information pertaining to the subject. By Benjamin F. Bliestensen and the subject of the
- Chemistry of the Metals. Jos. Hogisg Kastle.
- Progressive Carpentry. Embodying results of a study of all known methods of construction during a fifty years' experience of the author. With many valuable improvements set forth and explained. Together with a system of framing roofs. Sixth edition, enlarged By D. H. Melov, Architect. Illustrated. 80 pages, 5½ x 7½ inches.

- street Pavements and Paving Materials.

  A manual of city pavements, the methods and materials of their conscruction. For the use of students, engineers and city officials. By George W. Tillson, C. E., Pres. Brooklyn Engineers Cup., Mem Am. Soc. C. E., and Prin. Asst. Engineer, Department of Highways, Brooklyn, N. V. Svo., 532 pages; co figures. Cioth.
- Modern Electric Railway Motors. Adiscussion of current practice in electric railway motor construction, maintenance ard repair. By G. T. HANCHETT. Illustrated. 200 pages, cloth....\$2.00

- Sewage, and the Bacterial Purification of Sewage. By Samuel Rideal, D Sc. 8vo, cloth.
- Blue Print Making. Embracing directions for constructing the printing frame, preparing the paper and making prints of various kinds, 28 pages, paper.

- Management of Dynamos. A handbook of theory and practice for the use of mechanics, engineers, students, and others in charge of dynamos. By G. W. LUMMIS PATELSON. Second edition revised and enlarged. Illustrated. 262 pages, cloth, \$1.75
- Stromberg's Steam Users' Guide and Instructor. Giving explanations in regard to engines, pumps, dynamos, and electricity. Fitteenth edition, revised and enlarged. Illustrated. 354 pages, leather. 354
- Glue and Glue Testing. With figures and tables.
  By SAMUEL RIDEAL, D.Sc. Illustrated. 8vo, cloth.
  - Contents: Constitution and properties—Raw materials and manufacture—Uses of glue—Gelatine—Glue testing—Commercial aspects.

- French Polishing and Enameling. A practical work of instruction, including recipes for making polishes, varnishes, glaze-lacquers, revivers, etc. By Richard Bitmead. 12mo, cioth............60c,
- Electric Bells: How to Make and Fit Them. With numerous engravings and diagrams. Edited by PAUL N. HASLUCK. Idustrated. 19mo, cloth. 40c.
- Formulas in Gearing. With practical suggestions, By Brown & Sharpe Mrg. Co. Inustrated Third edition. 8vo, cloth.............\$1.50

- By T. CONYNGTON. 200 pages, cloth.

  Enamels and Enameling. Introduction to preparation and application of enamels for technical and artistic purposes. For enamel workers, work ers in gold and silver, etc. By P. Randau. Transfrom German. 16 illustrations. 188 pages, cloth.

- Pocket Companion. Containing useful information and tables appertaining to the use of steel as manufactured by the Carnegie Steel Co., for engineers architects and builders. By F. H. Kindle. 325 pages, flexible leather tucks. \$2.00
- Furniture Designing and Drafting. Notes on the elementary forms, methods of construction and dimensio s of common articles of furniture. By ALVAN CROCKER NYE. Ph. B. 20 full page plates, with numerous illustrations in text. 8vo, cloth,
- Practical Hints on Joint Wiping for Beginners in Plumbing. With an appendix giving a selection of practical letters and articles compiled from The Metal Worker. Sixth edition, enlarged. 41 illustrations, 66 pages, paper......25c.
- Field Testing for Gold and Silver. A practical manual for prospectors and miners. By W. HAMILTON MERRITT Illustrated. 144 pages, cloth,

- Introduction to Chemical Preparations. A guide in the practical teaching of inorganic chemistry. By Prof. Dr Erdann, of Halle. Authorized translation from the second German edition, by Frederick L. Dunlap. S.D., Worcester Polytechnic Institute. 141 pages, 12mo, cloth...\$1.25
- Railroad Construction; Theory and Practice. A text-book for the use of students in colleges and technical schools. By Walter L. Ween, Associate Professor of Civil Engineering in the University of Pennsylvania. 466 pages, 8vc, cloth, \$4.00
- New York. Laws and ordinances relating to buildings in Greater New York, with headings, marginal notes, paragraphs, and full indexes. Edid by W. J. FRYER. 612 pages, limp cloth......\$3.00

- Machinists' and Draftsmen's Handbook, Containing tables, rules and formulas, with numerous examples explaining the principles of mathems ies and mechanics as applied to the mechanical trades; intended as a reference book for all interested in mechanical work, By PKDER LOBBEN, 438 pages, cloth ... \$2.50
- Book keeping as It Is Practiced in Large Business Houses. By J. V. Hoffmann. 78 pages closers of the Practiced in Large

- Mounting and Framing Pictures. With nu merous engravings and diagrams. 8vo, cloth, 40c

- The Ore Deposits of the United States and Canada. By James Furnan Kemp. Containing numerous half-tone cuts and diagrams. 8vo, cloth \$5.00
- Architectural Drawing. Consisting of 96 full page diagrammatical and half-tone plates arranged in progressive order, with explanatory test. By C. Franklin Edminstra. Oblong 4to, 32.00

No. 10 to 10

CONTRACTORS

For the Manufacture of

JAMESTOWN, N. Y.

# Hardware Specialties and Metal Goods

FINE TOOL, SCREW MACHINE AND DRILL PRESS WORK. BROACHING, TEMPERING, ANNEALING AND ENAMELING. CORRESPONDENCE INVITED

### \$1,000 \$1,000,000

What is your plant worth in detail at prest to market prices ? How much would it cost to replace it com-letely?

How much would it cost to replace it completely?
Can you tell accurately how much insurance you can legally carry on it?
Can you tell how much insurance you could collect in case of a complete loss?
These questions are vitally important to all owners, stockholders or investors. The American Appraisal Co. can answer them.
Wefurnish complete and accurate invoices, Inventories, and plans of manufacturing plants, mills and all properties, guaranteeing absolute proof of loss in case of fire and correct data for carrying insurance. Invaluable in securing loans. We can refer vou to the following and many others: Bridg-port Brass Co., Bridgeport, Conn.; Fairbanks, Morse & Co., Chicago, Ill.; Vaughn Machine Co., Peabody, Mass.; Ansonia Clock Co., Brooklyn, N.Y., and many others. We will call upon you or write you. Send for our book of particulars. all upon you or wook of particulars.

#### THE AMERICAN APPRAISAL CO.

OF MILWAUKEE Capital Stock \$100,000. Eastern Department. 804-805 Park Row Bldg., New York. Telephone.

# Locations for Industries.



The Chicago, Milwaukee and St. Paul Railway Com pany has all its territory districted in relation to resources, adaptability and advantages for manupany has all facturing, and seeks to secure manufacturing plants and industries where the command of raw material markets and surroundings will ensure their perma

A number of new factories and industries have been induced to locate—largely through the inst mentality of this company—at points along its lines

The trend of manufacturing is Westward. fidential inquiries are treated as such. The intion furnished a particular industry is reliable. Address

#### LUIS JACKSON,

Industrial Commissioner, C., M. & St. P. Ry., 660 Old Colony Building, Chicago III.

# MADE TO ORDER. Light Stamped Work

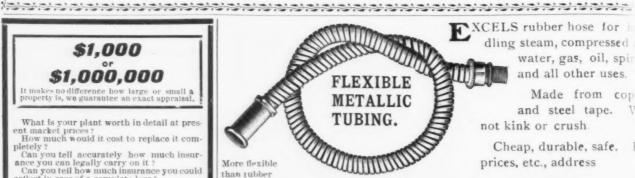
# **Small Turned Articles**

IN BRASS, ALUMINUM, ETC.

Send Sketch or Sample for Prices.

318-320-322 THIRD AVE., PITTSBURGH, PA. MADE OF FRANKLIN METAL.





EXCELS rubber hose for han. dling steam, compressed air. water, gas, oil, spirits, and all other uses.

> Made from copper and steel tape. Will not kink or crush.

> Cheap, durable, safe. For prices, etc., address

SHARP. KLUMPH & SISSON CO.,

1104-1105 Monadnock Bldg. CHICAGO.

and lasts ren

### THE BALKWILL PATTERN WORKS,

970-972 Hamilton St., CLEVELAND, O. WE MAKE A SPECIALTY OF RUSH WORK

# Book Notes

Chimney Design and Theory.—By Wm. W. Christie. Presents to engi-neers and architects the late practice on the theory and designing of chimneys as constructed in this country. The volas constructed in this country. The volume begins with an introduction and history, and deals in order with the theory of chimney draft; chimney formula; chimney tables; wind pressure; air spaces in grates; foundation materials; brick chimney materials; the theory pertaining to steel and brick chimneys, with examples from existing structures; chimney performances in structures; chimney performances, including special types; straightening chimneys. A chapter is devoted to house chimneys, another to lightning protection, the volume concluding with some general information pertaining to the subject.

Forty fine illustrations are devoted mainly to sectional views and photo reproductions of notable tall chimneys. 164 pages, cloth. Price.....\$3.00

The Testing and Valuation of Raw Materials Used in Paint and Color Manufacturing,—This handbook is not designed to more than supplement the comprehensive works on color manufacture now extant. It contains a selection of compounds which have yielded the best results during the several years experience of the author with laboratory work. By M. W. Jones, F.C.S.; 88 pages, cloth. Price.....\$2.00

Engine and Boiler Tests.-George H. Barrus is the author of a work entitled "Engine Tests," recently published, and

same writer's "Boiler Tests." The former embraces the results of over one hundred feed-water tests and other investigations on various kinds of steam engines, conducted by Mr. Barrus. The "Boiler Tests," an 1895 publication, contains the results of one hundred and thirty-seven evaporative tests made on 71 boilers, conducted by the author.

"Engine Tests," 350 pages, 400 illustrations, cloth. Price.....\$4.00

"Boiler Tests," 280 pages, illustrated, cloth. Price..... otn. Price......\$3.00
The two volumes are supplied jointly .....\$6.00

Analyses of Pig Iron.—This volume contains a collection of analyses of different grades of pig iron, the data having been obtained by the author or compiler from American and foreign producers. The analyses are several hun-dred in number and an index of the contributors is presented, also a special index of brands. The work is designed to meet the increasing demand among foundrymen and others for a reference book of the kind. Numerous specimens of various grades of pig iron, also a number of furnaces, are well illustrated. 173 pages, quarto, leather bound. Price .....\$2.50

Modern Invention .- The great scientific and engineering achievements of the century, including all the more important developments of the arts and sciences, are recorded and described in a volume just published entitled "The volume just published entitled "The Progress of Invention in the Nineteenth Century," edited by Edward W. Bryn, A.M. The work comes from the press of the Scientific American. Large oc-tavo, 480 pages, 300 illustrations, cloth. Price which is a companion volume of the Half red morocco, gilt top ..... \$4.00

All Books prepaid at published prices.

McKenna Brothers Brass Co., Ltd., OAVID WILLIAMS CO., Publishers and Booksellers, 232-238 William Street, New York.



#### A. G. BUTLER. PATTERN LETTERS



For Iron and Brass Castings Various styles and sizes. For Machines, Bridges, Tablets, etc. Leather and Wood Fillets.



Beekman Bldg., 103 Beekman St..



# **BUFFALO** DOWN DRAFT



Smoke and gases completely removed immediately as generated.

# FORGES

The most durable and efficient forge known. For light and heavy work.



Originated, Patented and Exclusively Controlled by the

Buffalo Forge Company,

BUFFALO, N. Y



S,

K

on.

on

00

n

0

al

METAL of every description.

Send samples or drawings for estimates.

HOUGHTON & BUXTON MFG. CO.,

BICYCLE FITTINGS.

FERRULES, FLOOR and CEILING PLATES, Etc.

STAMPINGS

Worcester, Mass., U. S. A.

METAL STAMPING.

Dies, Punches Metal Stamping. Send sample or sketch for prices.

E. KONIGSLOW & BRO., 184 CHAMPLAIN ST., CLEVELAND, O.

We do

Light or heavy, rough or finished. Send samples or drawings for estimate.

WHEELING HINGE CO.,

Wheeling, W. Va.

BRASS, STEEL, ALUMINUM or any Old Metal.

Sheet metal articles of any kind. Press work. Inventors' sheet metal models. Difficult work our specialty. Write us.

Address, SHEET METAL DEPARTMENT, THE GOODWIN & KINTZ CO., Winsted, Conn.

STAMPINGS. SHEET METAL DIES, PUNCHES, SPECIAL MACHINERY and TOOLS.

> New and strictly up-to-date equipment, prompt delivery and low prices. Send sample or drawing for estimate.

> > FRANK MOSSBERG CO., Attleboro, Mass.

Mfrs. Sheet Metal Novelties and Special Tools and Mach'y.

THE SEAMLESS METAL WARE

Plain and Decorated Tinware. Sheet Metal Stamping and Drawing. 277 BROADWAY, NEW YORK.

Correspondence Solicited and Estimates Furnished.

AMERICAN RAILWAY SUPPLY COMPANY Manufacturers of BAGGAGE, HOTEL AND FACTORY TIME CHECKS, METAL FIGURES AND LETTERS AND EVERYTHING IN THE LINE OF STAMPED METAL WORK. STAMPING

SHEET METAL

CLEVELAND STAMPING & TOOL CO., CLEVELAND, OHIO.

Read this strong testimonial from one of the largest manufacturers in the world!

WATIONAL ENAMELING & STAMPING CO.

Granite City, Illa. Hay 11th 1900

Markle Lead Works, St. Louis, Mo.

Markle Lead Work.

Bear Sirs:— St. Louis, Mo.

Bear Sirs:— We have used MARKLE MERIT WETAL

for the past two years in our rolling mills.

We have tested it under the most trying conditions and have no hesitancy in pronouncing
it entirely satisfactory. We are using it
under our universal rolls and it is the only
babbit notal we have found that will answer
for this purpose.

Yours truly,

ORANITE CITY STEEL CO.

HM Harlow st

We make a complete line of Babbitt Metal and all grades of SOLDER Special Metals Matched, and all kinds of Alloys made to order. Full satisfaction guaranteed or money refunded.

Markle Lead Works, St. Louis, U. S. A.

Makers of Shot, Babbitt Metal, Solder, Bar Lead, Can Wax, Targets and Traps Agents Wanter.

### PRESSED METAL WORK. **Light and Heavy Plates** Cut to Shape.

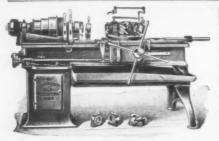
Sole Mfrs. of "NEVER-BREAK" Goods. THE AVERY STAMPING CO., Cleveland, Ohio.

BUY THE BEST. "ECLIPSE" and "ST. LOUIS"

Shoe Stands and Lasts, Shoe Hammers, Foot Rests, Saw Clamps.



JOHN C. KUPFERLE,



Does lathe work accurately up to 2 in. diameter by 24 in. long.

### JONES & LAMSON MACHINE CO.

MAIN OFFICE AND WORES: SPRINGFIELD, VERMONT, U. S. A. A. B. C. and Lieber's Codes used

ENGLISH OFFICE :

Room 6, Exchange Building, Stephenson's Place, Birmingham. FRANCE AND SPAIN:

PH. BONVILLAIN,
6, Rue Blanche, 6, Paris, France.

GERMANY, BELGIUM, HOLLAND, SWITZERLAND AND
AUSTRIA-HUNGARY:
M. KOYEMANN,
Charlottenstrasse 112, Düsseldorf, Germany. Noeway, Sweden, Denmark and Finland: AKTIEBOLAGET VERKTYGSMASKINER, Stockholm, Sweden.

# THE W.S. TYLER COMPANY, Successors to THE W.B. TYLER WIRE WORKS CO., MANUFACTURERS OF METAL ELEVATOR CABS, OF OUR OWN SPECIAL DESIGNS, In any Finish Desired. Estimates On Designs of Architects. CLEVELAND, OHIO.

an months of the same of the s

The only reasons that higher prices are being constantly paid by the most prominent steam users in the United States for Cahall Boilers are—that they are better made last longer, cost less for maintenance, show a higher efficiency and make drier steam than any other kind. Send for illustrated catalogue.

Cahall Sales Department, Pittsburg, Pa

### "AMERICAN" TRANSMISSION ROPE.

SEE ADVERTISEMENT PAGE 6.

#### ALUMINUM

Ingets, Sheets, Wire, Rods, Castings. Aluminum Wire and Cables (bare and insulated)

**ELECTRICAL CONDUCTORS.** The Pittsburgh Reduction Co., Pittsburgh, Pa.

Post Office, PITTSBURG, PA.

Mines and Ovens in the Connellsville Coke Region, Penna. HEADQUARTERS FOR

# GENUINE CONNELLSVILL

For Blast Furnaces and Foundry Cupola Work; also Crushed Connellsville Coke (substitute for Anthracite Coal) for manufacturing and domestic purposes.

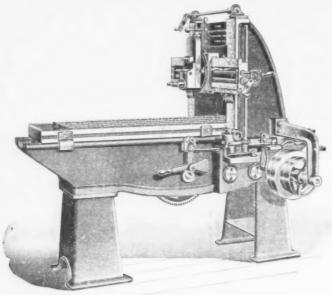
13,500 Ovens.

Daily capacity, 30,000 tons of Coke.

Direct Connections with all Railroads Entering the Region. Quotations, Freight Rates, Pamphlets giving full information, promptly furnished upon application.

# 16" x 16" x 4' Tool Room Planer.

We have recently re-designed our 16" x 16" x 4' planer in several important particulars with a view of presenting a machine that would meet the requirements of the most exacting of mechanics. No expense or pains have been spared to make this a machine that will plane perfectly true in every particular; each and every machine being brought to the degree of precision before it leaves our works.



It has a new departure in the way of feed mechanism. Very little power is required to drive this planer, as its feed mechanism is frictionless, and offers no resistance to the pull of the belts. Down feed is graduated to thousandths. This planer is finished in the same degree of excellence that is found on Hendey-Norton lathes and shapers. Net weight, 2,560 lbs. Send for catalogue.

# THE HENDEY MACHINE CO.,

Torrington, Conn., U. S. A.

OR THE FOLLOWING

U. S. AGENTS:

Hill, Clarke & Co., Boston; Manning, Maxwell & Moore and Th Garvin Machine Co., New York; J. W. Cregar, Philadelphia; U. Bair Machinery Co., Pittsburg; The E. A. Kinsey Co., Cincinnati; Mannin Maxwell & Moore, Chicago; Pacific Tool & Supply Co., San Francisc

#### EUROPEAN AGENTS:

Schuchardt & Schutte, Berlin, Vienna, Brussels, Stockholm, St Petersburg Chas. Churchill & Co., Ltd., London, Birmingham Adphe, Janssens, Paris. Stussi & Sweifel, Milan, Italy.

# THE IRON AGE

THURSDAY, NOVEMBER 8, 1900

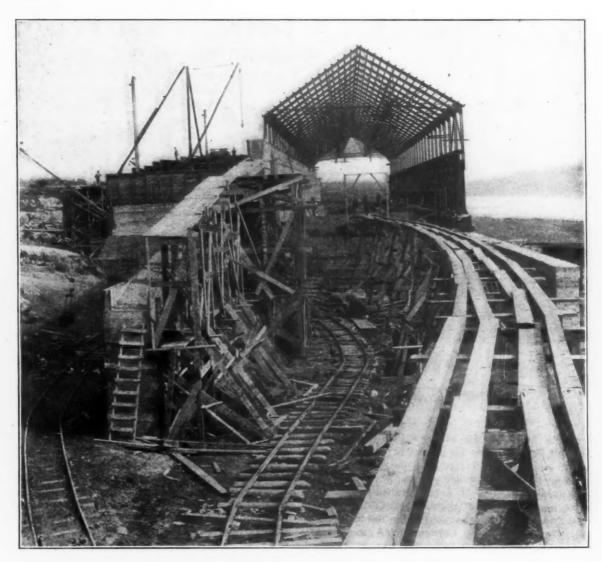
# ANOTHER GREAT HYDRAULIC POWER PLANT.

THE ST. LAWRENCE POWER COMPANY'S UNDERTAKING.

Significant of the tendency of the times, another great centralized power supply plant is nearing completion in upper New York State. Like many other recent central stations, and notably the one at Niagara, the plant referred to will be driven by water power. It is being built by the St. Lawrence Power Company of New York,

n-

power at low cost by taking advantage of natural conditions and the attracting of industries to the vicinity of the point of generation. In industries such as the manufacture of calcium carbide, aluminum and carborundum the greatest item of cost and first essential is that of electric power. The advantage of locating the works



End of Power House, Showing Dam Wall and Intake.

#### ANOTHER GREAT HYDRAULIC POWER PLANT.

who have given the construction contract to the St. Lawrence Construction Company, who have in turn sublet the work to the T. A. Gillespie Company of Pittsburgh. The St. Lawrence Construction Company bears the same relationship to the power company as did the Cataract Construction Company to the Niagara Falls Power Company.

The success of the hydraulic project at Niagara has marked the first step in the direction of generating

near the source of power is apparent when the great saving of the cost per horse-power is considered. Hitherto the power plant at Niagara Falls has been foremost in the list of large centralized power supply stations. Since 1895 there have been installed at Niagara ten 5000 horse-power Westinghouse generators. This plant affords a good basis of comparison for the new installation of the St. Lawrence Power Company, for which 15 5000 horse-power Westinghouse generators are under construction.

Only haif of the order will be delivered at this time. This is by all odds the largest single order ever recorded for power transmission purposes. The immediate capacity of the St. Lawrence plant when completed will be about 40,000 horse-power, and additions will steadily be made which will give it an ultimate capacity of 150,000 horse-power.

The Project.

Briefly stated, the method of securing this power will be by diverting a small portion of the waters of the St. Lawrence River through a canal into turbines, which will be direct connected to electric generators, and thence into the Grasse River. The water is taken from the St. Lawrence River at a point opposite the lower end of Long Sault Island, and the terminal of the canal at the Grasse River is directly outside of the town of Massena, N. Y. At this point the power house is located, as indicated on the accompanying map, Fig. 3.

It is owing to the pecular configuration of the coun-

through the power station, the wall of the station acting as the dam.

The Canal.

The canal, when completed, will be the largest in existence, when gauged according to the volume of water flowing through it, save the Baltic. It is to be 16,200 feet, or slightly over 3 miles, in length. According to present plans it will be 1871/2 feet wide at the base, 2621/2 feet wide at the water level, and 27 feet deep. Ultimately it will be considerably larger. The wet slopes of the banks will be one and a half to one and the dry slopes one to one. The canal has a wet cross section of 7000 square feet. With a maximum flow of 100,000,000 cubic feet an hour, the current will be less than 3 miles an hour. For this channel it will be necessary to excavate almost 8,000,000 cubic yards of earth, clay and gravel, about three-fourths of which has been removed. The average width of the bottom is now 140 feet, and the average width at the water level is 192 feet at pres-

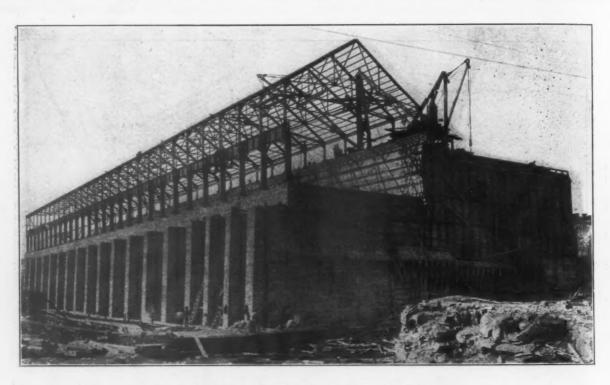


Fig 2 .- Power House, Showing Dividing Walls of Tail Race.

#### ANOTHER GREAT HYDRAULIC POWER PLANT.

try on the American side of the St. Lawrence in the vicinity of Massena that this project is practicable. Nature has provided that at this point the Grasse and the Racquette rivers flow parallel with the St. Lawrence, to which they are tributary. A comparatively level plateau, marked by a series of slight, parallel ridges formed with considerable regularity, constitutes the intervening country between the St. Lawrence and the Grasse As will be seen from the map, a series of islands divides the St. Lawrence at a point where the Long Sault Rapids flow for several miles northward and eastward along the Long Sault Island, which divide the river into two parts. At the head of the rapids in the St. Lawrence the river level is at an elevation of 42 feet above that of its tributary, the Grasse. It will, therefore, be seen that by diverting a portion of the waters of the St. Lawrence at this point into the Grasse a fall of 42 feet will be obtained. This is what is being done by the company. The line of the canal is almost straight southeast, the Grasse River acting as a tail race and again emptying the water into the St. Lawrence at a point further down stream. On the bank of the Grasse at the intersecting point of the canal the great power house is located. In fact, the water of the canal flows ent. In order to reduce the earth work a somewhat longer line than the present one was first contemplated, but the line which was finally decided to be the most advantageous was adopted at the expense of two heavy cuts. The northern of these is through the St. Lawrence Ridge; it has a length of 2250 feet, maximum depth of 80 feet, and 1,086,000 yards of excavation. A mile further south is the other, Andrew's Ridge. The cut here is of 85 feet maximum depth, 2500 feet long and involves an excavation of 540,000 yards. The forebay or basin immediately above the power house will be 310 x 120 x 25 feet deep. The canal will be crossed by two single span highway bridges of 408 feet span, on stone piers. One will be placed at the St. Lawrence and another about half way down the canal. A third roadway at the Grasse River end forms a cover to the turbine chambers and passes the length of the power house on the forebay side.

The Grasse River at the power house is of sufficient depth to serve as a tail race, so that no dredging will be required until after the development of 50,000 horse-power, and possibly not then. The available head at the power house is 32 feet.

It will be noted that Massena is situated at a point

convenient for shipping on two American and one Canadian railway systems, and that the great canal, when taken in conjunction with the Grasse River and the St. Lawrence River, forms a connection between the Great Lakes and the sea and an American waterway or passage around the Long Sault Rapids. At present the only passage around the rapids, which are unnavigable, is the Cornwall Canal, a Canadian project. In this connection it is suggested that there may be built an additional basin and a ship lock at the power house as a connecting link between the power canal and the Grasse River.

#### Methods Employed in Construction of Canal,

A variety of methods was employed in excavating the canal. The surface soil was taken off with Vivian scrapers and horse-power machinery. The deep excavations are being made by steam shovels and several types Between the ridges the excavations were made principally with power scrapers and hydraulic dredges. The material which was encountered was largely a tenacious blue clay, with some gravel and bowlders, which frequently required blasting. A pleasant feature of the work was that no rock was encountered along the entire route of the canal, excepting on the immediate site of the power house, just where it was of the greatest benefit for the building of foundations.

In general, little water has been encountered in the shovel pits, and the surface drainage collected has been small. In some instances water has been pumped into the cut to facilitate the operation of suction dredges. Some of the clay was taken out by means of hydraulic vacuum pump dredges. These machines are of special design and have a capacity of about 4000 cubic yards each in ten hours. Each dredge has a rectangular hull

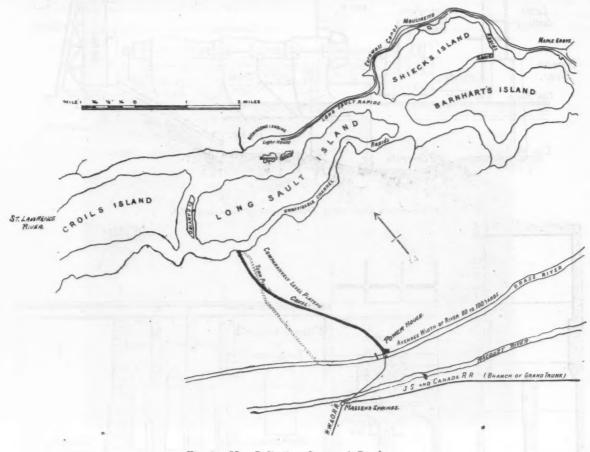


Fig. 3.-Map Indicating Course of Canal.

ANOTHER GREAT HYDRAULIC POWER PLANT.

of dredges. The work was divided into five sections—viz., the two ridges, the section between them, the section at the St. Lawrence River and the section at the power house. All excavation on the river section is made by floating dredges. On the power house section the excavation is made by dredges floating on water which was pumped into the pits where the work was started. The ridges are being cut out by means of dry excavations, the start having been made by pairs of steam shovels working toward each other. As the cuts deepened the clay and rocks removed were conveyed up an incline by means of narrow gauge cars to the spoil banks. A view of Andrew's Ridge, the larger one, is shown in Fig. 6.

The steam shovels which do not empty into the cars running over the inclines empty their buckets into 3 and 5 yard side dump cars, which are run over a temporary track through the cut and are hauled by locomotives to the spoil banks. Where the trains encounter steep grades they are aided by double drum hoisting engines, which operate two cables attached to the cars.

103 feet long, 34 feet broad and 12 feet deep. A 4-yard Hayward "orange peel" bucket brings up the clay and deposits it in a steel chute projecting transversely from the side of the bow. In this chute there is a shaft surmounted with a radial cutter, driven by an independent engine. The revolution of the cutter breaks up the material delivered into the chute. Disintegration is aided by four 2-inch jets of water at 25 pounds pressure, which can be directed toward any portion of the hopper. The contents of the hopper are discharged through an 18-inch pipe carried through the hull from end to end. The end of the flexible discharge pipe was frequently 500 feet distant and 50 feet above the discharge cylinder on the dredge.

The section between the ridges was excavated principally by Vivian scrapers. These made transverse trenches 9 feet wide, about 25 feet maximum depth and 15 feet apart, center to center. Each scraper had a rectangular 3-yard skip or pan 9 feet wide operated by a dumping cable and drawn by an endless cable. Both cables were operated by a 12½ x 15 inch Lidgerwood

engine set in a head tower on one bank of the canal. The work of the scrapers was supplemented by that of a land dredge with an orange peel bucket, which made a cut 40 feet wide and 15 feet deep, delivering the spoil to dump cars on the upper level. A small cut made near the power house was filled with water from the Grasse River to float a Vivian suction dredge. This had a pivoted suction pipe 12 inches in diameter and 40 feet long, operated by a centrifugal pump driven at 200 revolutions and discharging through a pipe 200 feet long with

the Grasse River. The main building will be 700 feet long by 153 feet wide and 80 feet high. The present length is 360 feet. In the construction 80,000 cubic yards of concrete will be used, as almost the entire building, with the exception of the steel superstructure, will be made of that material. In Fig. 2 is shown an exterior view of the power house as it appeared on October 1. The side of the building facing the Grasse River is shown in this view, as is also the end of the building to which additions can be made as the canal is widened. The

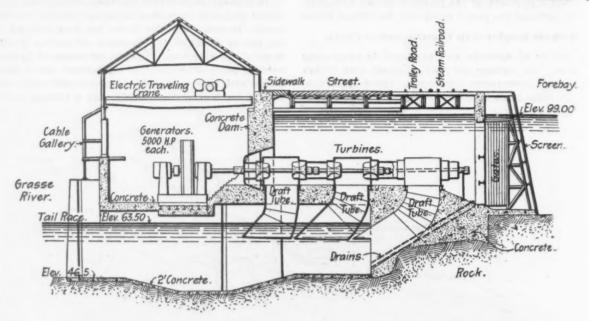


Fig. 4.—Section Illustrating Arrangement of Generating Set.

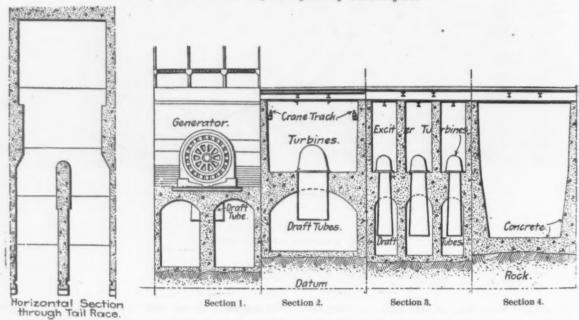


Fig. 5.—Sections Showing Tail Race Under Each Set of Draft Tubes.

#### ANOTHER GREAT HYDRAULIC POWER PLANT.

its outlet 20 feet above the pump. In hard material the bank was shattered by blasting before it was dredged, so that it crumbled in small pieces and did not bury the suction pipe. A hemispherical cutter head inclosed the inlet of the suction pipe and was operated by a shaft alongside of the pipe. The cutter was driven at a speed of ten revolutions per minute, being about 3 feet in diameter. It bored rapidly into the clay, loosening it sufficiently to allow the suction pipe to take it off. The Morris Machine Works of Baldwinsville, N. Y., built the

#### The Power House.

As previously stated, the foundations of the power house are cut in a ledge of rock on the north bank of canal is built right up to the back of the building, so that in fact the building will be the terminal of the canal. In the engraving a holsting engine is shown mounted on the wall which will act as the dam. The arches for the exit of the water from the draft tubes are also shown.

Fig. 1 shows an end view of the building, indicating the power wall and water inlet and the structure in which the generators and electrical machinery will be placed.

Fig. 4 is a section of the power house, showing the arrangement of the turbines and generators, as well as the gates and screen wall.

It will be noted that each generating unit consists of

three pairs of inward flow horizontal turbines mounted on a shaft coupled to the shaft of a 5000 horse-power generator. Two of the turbines will discharge into each draft tube. Each turbine will be 54 inches in diameter and each wheel will develop 1000 horse-power at its normal speed of 150 revolutions per minute. The draft tubes are riveted steel, 10 inches in diameter. Each of the shafts is 121/2 inches in diameter where it passes through a water tight bearing 30 inches long. This bearing is in the dam wall where the shaft passes through into the generator room, as shown in Figs. 4 and 7. Large cast steel rings imbedded in the wall leave a circular opening of about 9 feet wherever a shaft is to pass through. The face of each ring is turned down to a flat bearing surface, the work having been performed after the wall was built around the rings. To this surface outside plates are bolted, which carry the water tight journals. Governors will be attached to the turhines.

The turbines for each unit are located in an independ-

inches long. Each of the machines will weigh 75 tons. The equipment of exciters will consist of three 300-kw. machines direct coupled to the turbines and giving current at 125 volts at their normal speed of 275 revolutions per minute. The exciters are to be connected to a storage battery so as to run parallel with it at all times. This is done for the double purpose of keeping the voltage of the current passing through the fields of the generators constant and thus making their regulation an easy matter, and also of acting as a standby in case it should be found necessary to shut down the exciters.

The tail race under each set of draft tubs is shown in Fig. 5. Section 2 shows the tail race immediately underneath the draft tubes. At that point it consists of a waterway 32 feet wide, covered with a concrete arch of 19 feet radius. The arch is 6 feet thick beneath the center line of the turbines and the concrete walls separating the tail race channels are 6 feet thick. Beneath the generating tube room, where greater weight must be supported, it was deemed advisable to place a



Fig. 6.-View of Cut through Andrew's Ridge.

#### ANOTHER GREAT HYDRAULIC POWER PLANT.

ent chamber, separated from those on either side by a concrete wall 6 feet thick at the bottom and 4 feet thick at the top. Each chamber is provided with tracks for a traveling crane for handling the different parts and also with gates for excluding the water when it is necessary to clean the chamber or make repairs. The turbines rest on cast iron bed plates bolted to I-beams imbedded in the concrete foundations. The immediate installation will include seven generating sets, as shown in Fig. 5, and three smaller turbines operating three direct current generators, to be used as exciters for the main machines. The turbines are being furnished by the Stillwell-Bierce, Smith-Vaile Company of Dayton, Obio.

The dynamos will generate three-phase currents at 2200 volts in each phase. The machines are of the revolving field type, with external armatures, the field having 20 poles with 12 slots per pole per phase in the armature winding. The manufacturers, the Westinghouse Electric & Mfg. Company of Pittsburgh, guarantee them for a normal output of 5000 horse-power and a maximum output of 7500 horse-power. The bearings of these machines are 16 inches in diameter and 65

support in the center, as shown in section 1. Consequently the tail race divides into two waterways, each 14½ feet span, with a wall 4 feet thick separating the waterways and a pier 5 feet thick directly under the generators. This is illustrated in the horizontal section, in Fig. 5, through the tail race. Section 3, Fig. 5, shows the draft tubes and tail race of the small exciter turbines, and section 4 is of the forebay behind the exciter turbines. Fig. 7 shows a general view of a set of the turbines, draft tubes and generator.

A platform is located at one end of the generator room for the electrical controlling instruments. A gallery walk connecting with it extends along the rear wall of the generator room. The cable gallery is in a lean-to outside of this wall. An 80-ton electric traveling crane will span the generator room.

In the switchboard arrangements there are a number of novel features. The platform from which the great machines are controlled is now located at the end of a gallery which skirts the entire south wall of the building. The enormous current is carried to a main switchboard by means of massive copper bus bars. This switchboard is operated from the platform which is now at the end

of the gallery, but which will be directly in the center of the station when the full 75,000 horse-power equipment now under contract is in place.

One man by manipulating a series of electric buttons, arranged on a small stand made desk fashion and semicircular in shape, controls the entire electrical equipment. The controlling stand will carry a number of marble slabs or tablets (one for each generator), upon which will be mounted small controlling keys. These keys are arranged on the interlocking system, and they will operate

tion, Fig. 8, shows the central controlling stand; in front of the operator, and raised high enough above him to afford a clear view of the floor of the entire station, are seen groups of indicating instruments in the circuits of the various generators. The operator has thus under his eye the huge generators themselves, their corresponding switches and indicating instruments, and in reach of his fingers are the electric buttons, by means of which the entire plant is regulated and controlled. This system affords a complete isolation of the different generators

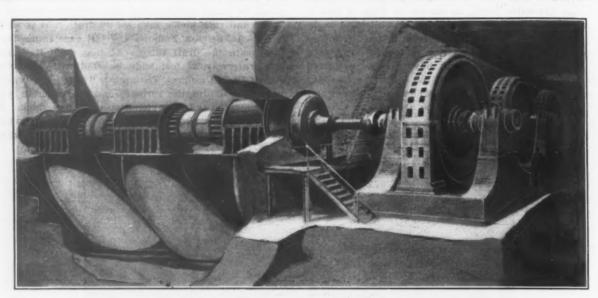


Fig. 7 .- Arrangement of Turbines, Draft Tubes and Generators.

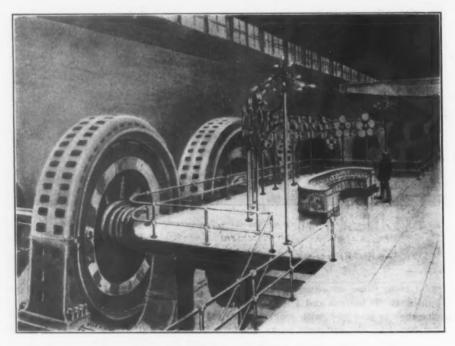


Fig. 8 .- Switchboard Controlling Stand.

#### ANOTHER GREAT HYDRAULIC POWER PLANT.

by means of local battery circuits a series of compressed air valves and pistons. The latter will, in turn, control a series of 15 switching stands, one for each generator, equipped with the necessary cut outs and switches. The stand will be located under the raised platform and approximately opposite its corresponding generator. Each stand will carry three-pole carbon shunt circuit breakers, in series with which will be three-pole double throw switches. The circuit breakers and switches are controlled by means of compressed air, as previously stated, from the central controlling stand operated by the engineer. Stands, similar to the switching stands, are provided for the different outgoing circuits. The illustra-

and their switches, thus greatly diminishing the chances of accident; it removes the operator entirely from contact with the electric conductors themselves, thus obviating all risk of personal injury. Behind the operator, and occupying positions corresponding to the switching stands, will be located a series of pneumatically controlled rheostats for regulating the magnetic fields of the different generators.

#### In General.

The St. Lawrence Power Company own 1600 acres of land in the immediate vicinity of the power plant, which they propose selling to concerns who expect to locate

there and obtain their power from the company. They also own the Massena Terminal Railway, which runs from the power house to the junction of the New York Central Railroad and the Grand Trunk Railway. That the building of the plant to its full capacity will be put through without delay may be inferred from the fact that the company are now negotiating with parties who will require in the aggregate 80,000 horse-power.

William F. Zimmermann, vice-president and general manager of the company, is making the arrangements with concerns requiring power and is superintending the

work generally.

The engineers of the St. Lawrence Power Company are John Bogart of New York, and Kincaid, Waller & Manville of London. William H. Cushman is the resident engineer representing these interests.

Robert Swan, vice-president of the T. A. Gillespie Company, is the resident engineer representing Mr. Gillespie.

The iron and steel structural work on the building and the bridges is being performed by the Hilton Bridge Construction Company of Albany, N. Y.

#### The Implement and Vehicle Manufacturers.

The National Association of Agricultural Implement and Vehicle Manufacturers held their seventh annual convention in Milwaukee, Wis., on Wednesday, Thursday and Friday of last week. The convention was one of the best attended in the history of the association. About 200 of the largest companies and firms in the United States engaged in the lines covered by the association were represented, and it is estimated that about 200 other persons were in attendance, including wives of members, representatives of related manufacturing interests, editors of trade papers and others.

The convention was welcomed to Milwaukee by Mayor Rose, and a suitable response was made in behalf of the association by H. C. Staver of Chicago. President W. C. Nones of Louisville, Ky., delivered his annual address, in which he indorsed the resolutions of the association in former years in favor of Congress creating a De-partment of Commerce and Industry, the establishment of a uniform classification of freight rates, the restoraof a merchant marine, the building of the Nicaragua Canal, the improvement of the parcel post system at home and abroad, the expansion of the foreign trade of the country and the improvement of the patent laws. In the way of new lines upon which to work he suggested a movement toward the reclamation of the arid lands of the West of which there are 74,000,000 agrees gested a movement toward the reclamation of the arid lands of the West, of which there are 74,000,000 acres capable of supporting, it is estimated, 50,000,000 of people. The restoration of denuded forest areas with the aim of conserving water powers was urged, and it was suggested that the resolutions asking Congress to enact laws and make appropriations for these purposes would be presented to the convention. Co-operation with the various dealers' associations was suggested to the end that no goods may be sold to catalogue houses to the injury of the dealers engaged in the legitimate implement and vehicle trade. Action concerning the laws relating and vehicle trade. Action concerning the laws relating to corporations engaged in interstate commerce was also recommended.

The membership of the association, according to the report of Secretary Frank E. Lukens, was 373, showing

Treasurer H. N. Wade presented his report, giving the receipts of the year at \$7072.77, including the balance from the previous year, while the expenditures had been \$4200.55 leaving a balance in the treasurer of \$200.60 and \$200.00 a \$4206.55, leaving a balance in the treasury of \$2866.22.

Committees were appointed as follows:

Nominating Committee: R. H. Foos, F. K. Bull, Frank Slosson, S. E. King, P. A. Myers. Necrology: H. A. Cavanaugh, O. R. Baldwin and J. E.

Resolutions: E. D. Metcalf, J. H. Bradley, F. E. Meyer, B. T. Skinner and W. A. Meredith.

Judge Wm. E. Vincent of Chicago addressed the convention on legislation relative to interstate commerce

The following officers were elected for the ensuing year: President, James A. Carr of Richmond, Ind.; cnairman Executive Committee, W. S. Thomas of Springfield, Ohio; other members of committee: F. E. Meyers of Ashland. Ohio; H. C. Staver of Chicago; W. W. Collier of Detroit; treasurer, U. G. Orendorff of Canton, Ill.; secretary, Frank E. Lukens of Chicago.

The association adopted resolutions in favor of Congress making suitable appropriations for the irrigation

gress making suitable appropriations for the irrigation and reclamation of the arid lands of the West; also resolutions strongly favoring united action for uniform

legislation in the various States not inimical to the national association, as well as favoring laws of an inter-state character for the better transaction of the great business of the combined membership of the association.

Kansas City was selected as the place for holding the next annual meeting. Elaborate arrangements had been made by the citizens of Milwaukee for the entertainment of the members of the convention and their friends. This entertainment included theatre parties, trolley rides about the city, carriage drives to points of interest and visits to a number of the large manufacturing establishments for which Milwaukee is famous not only in this country but abreed. but abroad.

#### Handling Machine Shop Scrap.

In a paper before the St. Louis Railroad Club, J. A. Carney of the C., B. & Q. R. R. presented a method of handling machine shop scrap from the time it is made at the machine until it is loaded for shipment to some central point, where it is sorted into grades which will bring a maximum price. From this standpoint scrap divides itself into (1) borings and turnings; (2) punchings and shearings and odds and ends weighing not more than 5 or 6 pounds, and (3) large pieces. Borings and turnings should be collected in wooden trays set under the machine, thus catching nearly all the scrap; the small quantity which falls outside the trays can be collected by the sweeper, who wheels the scrap to a bin where it can be conveniently loaded into cars. At one where it can be conveniently loaded into cars. shop this bin is arranged something on the coal chute order. The bins are filled from a platform on one side, and are so arranged that they can be emptied into a car on the other side by means of a suitable chute or apron. By this method no shoveling whatever is done. The only sorting that this kind of scrap can be given in most shops is to keep cast iron separate from steel and wrought iron.

Punchings, shearings, odds and ends, should be put into boxes of about 200 pounds capacity at the machine where they are made. These boxes, when full, are car-ried to the scrap shed, where they are piled up ready for shipment to the scrap dealer, or to a central point, where it is finally sorted. If the scrap is sold, the boxes are dumped into cars. If, however, it is going to some cen-tral point for sorting, the boxes filled with scrap are carried into the cars and piled up securely. At the central point the scrap is unloaded in the boxes, sorted, and thrown into the scrap bins, the boxes being returned to the point from which they started. The advantages of the point from which they started. The advantages of handling scrap in boxes are (1) reduced cost of labor for handling, and (2) sorting by natural selection.

The old method of piling scrap up on the ground, then when the pile got in the way to move it to some other

place, handling it with a shovel or picking each piece up by hand, was expensive. Practice has developed that a 200-pound unit is an easy and convenient one to handle. The cost of handling small scrap by the old method amounted to about 20 cents per ton for each handling. By the box method it can be handled for about 6 cents per ton.

Where work on machines is fairly uniform the scrap made must necessarily be of about the same quality. This scrap, when collected and stored in same quality. This scrap, when conected and stored in boxes, requires little if any sorting. In this way machine shop scrap, blacksmith shop scrap and boiler shop scrap, especially that covered with scale and known as "lime" scrap, are kept separate, and can be sorted in 200-pound units much quicker and easier than if each validate walching a few opposes its handled separately.

piece, weighing a few ounces, is handled separately.

The boxes used are made of 1-inch unfinished pine, and are 24 x 14 x 5 inches deep, inside dimensions. The

sides are extended to make handles for carrying, and the ends are bound with hoop iron. Pieces of scrap too large to go into boxes are economical units in themselves, and are handled a piece at a time.

The box or unit method need not be confined to the machine shop, but is good anywhere for any kind of metallic scrap. It has been used successfully by section men in relaying track. Instead of throwing old track spikes and bolts on the ground, to be picked up later, the old and worn out material is thrown into the box and the section men are relieved of the labor of going over the ground to pick up after the work is done. It may take a little more time to use boxes, but, if intelligently done, the loss of time is small and the saving in labor great.

Instead of the iron fire proof curtains generally used in French theaters, one made of sheet aluminum has been adopted for the Opera House at Besançon. It is one-fifth the weight of an iron curtain of equal dimen-

#### Points in the Manufacture of the Locke Steel Link Belting.

In The Iron Age of March 3, 1898, we described and illustrated a machine designed by the Locke Steel Belt Company of Bridgeport, Conn., for making a detachable steel link sprocket chain. The link is made from a blank or section of a strip of steel, which is slightly longer than the pitch of the finished link. The ends of the blank are formed up into quarter circles for the upper portions of the end bars, while the stock from the center is punched down and then rolled up to form the remaining portions of the end bars. By this method every part of the stock is utilized, and because of this very simple construction it is possible to make the link and the completed chain by an entirely automatic machine. The chain is made from a coiled strip of sheet steel, which is rolled to the required width and thickness. This is preferred to strips split from wide sheets, as the edges are rounded. The strip is automatically fed through the press, from which it emerges as a complete chain, all the links being joined together. The advantages of this chain rest in its strength, elasticity, durability and accuracy, and we may also say its lightness, compared with its great strength. The latter, of course, depends upon the amount of metal in the two sides and also in the bearing end of the link, its only chance of destruction being in the rupture of the sides or the straightening

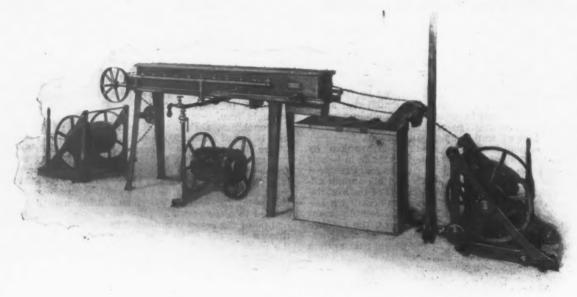
After passing through the furnace the chain is guided through the cooling tank, from which it is wound upon a reel. This reel, shown at the extreme right in Fig. 1, is automatic in its action and winds the chain in perfect layers like thread upon a spool. Placed across the upper part of the reel is a rod, upon which are cut two threads or grooves, one being the reverse of the other. At each end these right and left hand threads are united. A guide is placed on this rod, a pin bringing it into engagement with the thread, so that it moves forward and back on the rod. The chain passes over this guide. A sprocket chain passes over wheels on the reel arbor and the threaded rod. It is evident that if the pitch of the thread equals the width of the chain the latter will be wound evenly. By changing the relative size of the two sprocket wheels the threaded rod may be made to handle chains of different widths.

After having been hardened the chain is tempered in

After having been hardened the chain is tempered in the bath, shown in Fig. 2. This consists of a tank filled with tempering oil, which is heated to 520 degrees. A filled reel is swung over the tank and lowered into the oil, where it is allowed to remain until it has attained the same temperature as the bath. By this means the most perfect results are obtained.

#### Chains Arranged as Carriers,

The several views in Fig. 3 illustrate how the belting may be arranged to serve as a carrier. The attachments



Hardening a Chain.

#### POINTS IN THE MANUFACTURE OF THE LOCKE STEEL LINK BELTING.

of the bearing portion. Its accuracy is assured by the method of manufacture, and just so long as the dies maintain their true proportions one link is of necessity exactly like all the others.

#### Composition of Steel.

The machine for making the chain having been perfected, an extended series of experiments was necessary in order to find the steel best suited to the purpose. No trouble was found in working steels of widely varying compositions, since the distortion produced by the machine was by no means excessive. The principal difficulty was in finding the proper percentage of carbon, and upon this question authorities were by no means agreed. Some advised a high carbon content—from 0.40 to 0.70 and even as high as 0.80. These were hard to temper, the chain made of them being too brittle and being deficient in toughness. A steel of 0.30 carbon was finally selected. The writer saw two small chains of the same size tested. One was high carbon, the other 0.30 carbon. The first showed little or no elasticity and snapped like glass under a pull of about 600 pounds. The second has the elasticity of a spring and withstood more than twice the strain.

#### Hardening and Tempering.

A gas furnace of special design was introduced for hardening the chain. This furnace, shown in Fig. 1, marks an innovation in the arrangement of the flames. The floor of the box, which is lined throughout with fire brick, is on a level with the jets which enter each side. The chain rests upon this floor in its slow passage through the furnace and is always subjected to the direct heat of the flame. This has been found to produce more uniform and quicker results than heating by radiation.

may be placed upon the face of the link or upon either or both of the side bars, as may best meet the demands of the work. These attachments can be varied so as to conform to almost any requirements. The numerous testimonials received by the company prove the many advantages possessed by their belting.

The National Wagon Manufacturers' Association met in Chicago in annual session on October 30, representatives of 29 concerns being present. It was agreed that there should be no change in the price of wagons during the coming year. The following officers were elected: President, F. B. Suydam of the Wilbur Wagon Company, Toledo, Ohio; vice-presidents, George R. James of the James & Graham Wagon Company, Memphis, Tenn.; and F. L. Mitchell of the Mitchell & Lewis Wagon Company, Racine, Wis.; secretary and treasurer, H. M. Kinney of the Winona Wagon Company, Winona, Minn.

The contract for the construction of the Indianapolis & Martinsville Electric Railroad in Indiana has been let to the Dennis Construction Company of Pittsburgh. The road will be a little over 30 miles long, and the total cost, with equipment, is estimated at between \$700,000 and \$800,000. The Dennis Construction Company have just completed the building of the Cincinnati, Lawrenceburg & Aurora Electric Line.

Considerable car shortage exists in the Pittsburgh district in coal, steel, merchandise and grain. The requisition for cars far exceeds the supply. The only line of freight that is an exception to this condition is coke, for which the car supply is ample.

#### The Dividends of Metal Mines.

In the ten months ending October 31 the metal mining companies in this country reporting to the Engineer-

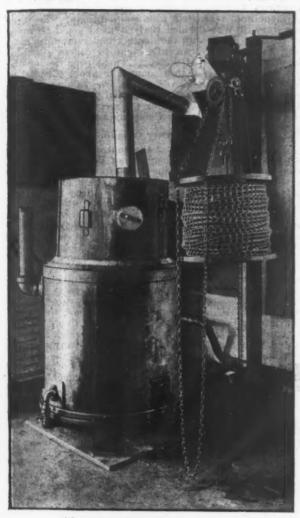


Fig. 2.—Tempering Bath.

trol the Anaconda and Parrot and have a large interest in other companies, declared \$6,000,000, or 8 per cent. on their capitalization. The Anaconda Copper Company are credited with paying \$4,800,000, or 16 per cent. on their capital stock; the Boston & Montana Company, \$4,200,000, or 113 per cent., and the Parrot Company, \$1,379,100, or 60 per cent. on their issued capital stock. The Amalgamated Company's dividend, however, is really a duplication, as they work no mines directly, and their dividend is derived from the stocks of other companies which they hold. Of the Michigan copper companies, Calumet & Hecla paid in the ten months \$5,000,000, or 200 per cent. on their capitalization; Quincy, \$900,000, or 200 per cent., and Tamarack, \$420,000, or 28 per cent. In California the Mountain Copper Company paid \$1,200,000, or 19.2 per cent. on their share capital. In Arizona the United Verde (ex-Senator Clark's property) are credited with paying \$1,650,000, or 55 per cent. on their capital stock, and the Arizona Copper Company, \$576,429, or 18 per cent. The next largest dividend payers in the ten months were the gold mining companies, which also produced some silver and lead. In this group the leaders were Stratton's Independence, Limited, of Colorado, with \$1,789,337, or 35.8 per cent. on their issued capital stock, and Portland, \$750,000, or 25 per cent. In South Dakota the Homestake Gold Mining Company are foremost with \$1,050,000, or 5 per cent. on their share capital. In Utah the Silver King Company paid \$750,000, or 25 per cent. on their capitalization, and the Daly-West Company, \$412,500, or 13.7 per cent. In Alaska the Alaska-Treadwell Gold Mining Company paid out \$800,000, or 6 per cent. on their capitalization, and in California we have the Yellow Aster Company with \$130,000, or 13 per cent. Of the silver-lead dividend payers, those in Idaho are most prominent, being the Empire State-Idaho Mining Company with \$295,000, or 59 per cent. Of the lead and zinc mining companies in Missouri and Kansas, the St. Jo

Orders for car equipment continue large, due mostly to the heavy freight traffic. The Pennsylvania Railroad

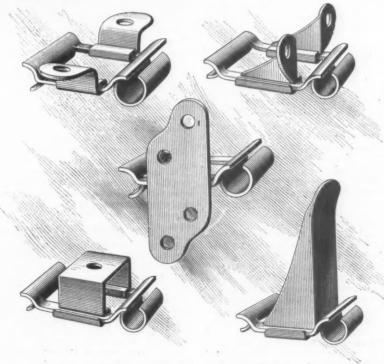


Fig. 3.—Chains Arranged as Carriers.

POINTS IN THE MANUFACTURE OF THE LOCKE STEEL LINK BELTING.

in dividends. During these ten months the largest dividend payers were the copper companies: of those in Montana the Amalgamated Copper Company, who con-

has just ordered an additional 1000 cars, of which 400 are to be of the box pattern. The Buffalo, Rochester & Pittsburgh Railroad has contracted for 500 hopper coal cars from the American Car & Foundry Company.

#### Contractors and the War Department.

#### The Driggs-Seabury Gun Contract.

Washington, D. C., November 6, 1900.—The Secretary of War within a few days will take up for final determination a notable case of much interest to manufacturers having contract relations with the Government, and the early history of which was published in *The Iron Age* some months ago. It concerns the extent to which contractors may become delinquent without forfeiting their contracts, or Geir rights to enter into new contracts, and the authority of the Secretary of War to grant indulgences to contractors who are in arrears.

The case was originally brought to an issue in the latter part of Secretary Alger's administration when the bid of the Drigg-Seabury Gun & Ammunition Company on a contract for certain rapid fire guns was thrown out by a ruling of the Assistant Secretary of War on the ground that the company were already in arrears on a previous contract. The action of the Assistant Secretary was taken during the absence of Secretary Alger, and was officially announced as establishing a precedent for the government of all contractors doing business with the Department. The Driggs-Seabury Company having appealed to the Secretary of War, a hearing was granted at which representatives of the American Ordnance Company, the only other bidder on the new contract referred to, submitted an argument in support of the Assistant Secretary's ruling, which was in part as follows:

"We beg to respectfully invite your attention to the fact that under the first contract for the manufacture of 20 6-pounder and 80 15-pounder guns and mounts with 300 rounds of loaded ammunition per gun, delivery of which, under the contract, was to begin within 60 days after the date of contract and to be completed on or about April 13, 1899, not a single gun, mount, or round of ammunition has been delivered down to the present time. Furthermore, the 15-pounders, being a new type of gun, type test is essential. But not even a gun has, so far as we are advised, passed the test. According to the terms of the contract penalties accrued to the estimated amount of more than \$200,000, but we are advised that the Ordnance Department remitted all penalties down to June 5, 1899, the date of the order of Acting Secretary Meiklejohn, which order forbade the remission of penalties in the future except by order of the Secretary of War. The bid for the second contract by the Driggs-Seabury Company was not above the actual cost of manufacture. Being already in default under a much larger contract they must have well known the importance of delivering the ordnance within the time required. Having already a Government contract for \$700,000 of ordnance, the prospect of the award of another for \$200,000 was well advertised in the public press, it is believed, for the purpose of improving their financial standing in the commercial world. . . . . .

"So far as we have been able to ascertain, the Driggs-Seabury Company have never since their organization furnished a gun or mount to the War or Navy Department. During the past two years the American Ordnance Company have furnished 488 guns to the War and Navy Departments and the revenue marine. It is believed there is a limit beyond which the Driggs-Seabury Company or any other company should not be permitted to impose upon the Department, and we further believe that that limit has been reached and passed. In view of the absolute incompetency of the Driggs-Seabury Company, as shown in the report of the Chief of Ordnance, and in justice to the manufacturers of ordnance who are able to carry out their contracts, it is respectfully submitted that if there be error in the decision of Acting Secretary Meiklejohn it is because he should have decided that the Driggs-Seabury Company were not a competent bidder for the second contract, and he should have decided that the contract be awarded the American Ordnance Company, instead of deciding that new bids should be called for. As to the statements so adroitly put forth in the press that the American Ordnance Company are a trust concern, those statements are hereby declared to be wickedly and maliciously false. The American Ordnance Company are in no sense directly or indirectly a trust corporation."

The defense of the Driggs-Seabury Company was based upon modifications in the specifications which, it was said, had been made by the ordnance officers, and also because of requirements calling for materials embracing conflicting and irreconcilable qualities. After hearing both sides of the case, Secretary Alger decided that the default of the Driggs-Seabury Company on the first contract should not operate as a bar to their securing another contract, but stated that the acion of the Department in letting the second contract should not be construed as a waiver of any of the second contract should not be

strued as a waiver of any of the accrued penalties.

Shortly after this decision Secretary Alger resigned

his portfolio and was succeeded by Mr. Root, to whom an application was made by the Driggs-Seabury Company to receive payment for certain material delivered, though the same was not in the form of the units—gun, mount and ammunition—called for by the contract. The American Ordnance Company protested against such payment and a hearing was granted, after which the Secretary of War decided that payment could be made for parts of units, with the distinct understanding, however, that the Government's right to collect penalties should not be affected thereby. These penalties on the first contract referred to amounted to about \$258,000 at the time Secretary Alger's action was taken, and the Department calculates that additional penalties of about \$150,000 have since accrued on the second contract, upon which the Driggs-Seabury Company are also in default.

#### Selling to Other Customers.

With a view to assisting the contractors an application was granted by the Secretary of War to use certain heavy presses located at the Frankfort arsenal for the drawing of cartridge cases for ammunition for the guns contracted for, the Driggs-Seabury Company not having the necessary equipment to do this work. Recently, the War Department officials received information that, although in arrears to the Government on their contracts the Driggs-Seabury Company had sold and delivered to the Government of the United States of Colombia several 6-pounder guns and 2000 rounds of ammunition of a type identical with that called for by the company's contracts with the War Department. In addition, it was said that other guns and ammunition were to be furnished for the equipment of a remodeled yacht which the Colombian Government acquired a short time ago. This information caused Secretary Root to address a letter to the Driggs-Seabury Company, in which he commented with much severity upon the company's action in selling to other customers material due the United States, and especially in taking advantage of the Department's permission to use Government machinery to manufacture material for other parties.

partment's permission to use Government machinery to manufacture material for other parties.

The Secretary stated that under a contract dated in April, 1898, the company were now in default by the non-delivery of 2000 rounds of ammunition for 6-pounder guns, all of which by the terms of the contract should have been delivered by August 27, 1898, and by the non-delivery of 5000 rounds called for by a supplemental order. For the purpose of enabling the company to perform their contract, which the Secretary stated "they appeared otherwise unable to perform," and to enable the Government to get the desired ammunition, permission was given them to use the large press at the Frankfort arsenal for the purpose of drawing the ammunition cases to be furnished under the contract. The Secretary was informed, he said, that the ammunition amounting to 2000 rounds, delivered to the Colombian Government, was contained in cases manufactured by the company by the use of this press, which, he said, the contractorshad "no right to use for any other purpose than for filling your contract with the United States Government." Further, the Secretary said, the company had no right to use their plant and machinery for the manufacture of guns and ammunition for other customers, leaving their contract with the United States Government unfilled, and the violation of their obligation appeared to be "all the more flagrant" because of the fact that on July 8, 1899, a further contract was secured from the War Department for 40 6-pounder and 40 15-pounder rapid fire guns, all of which should have been delivered by August 1, 1900, and none of which had as yet been delivered. The Secretary closed his letter with peremptory notice to the contractors to give reasons within one week why the Government should not supply the deficiency under existing contracts in open market or to declare the contracts null and void.

#### The Driggs-Seabury Company's Defense.

The Driggs-Seabury Company, replying to Secretary Root's letter, stated that their failure to deliver the ammunition referred to was because of changes made by the Ordnance Department in the quality of powder required. As to the statement that they had drawn cartridge cases at the Frankfort arsenal for the Colombian Government, they said that having paid all expenses of running the plant and paying for all material employed, they thought the product was their property until the Ornance Department had received and paid for it. The reply further stated that they believed they had a right to sell the cartridge cases for cash, which they could not get from the War Department, inasmuch as they could replace them before they could procure the powder to meet the Ordnance Bureau's requirement. As to the 6-pounders sold to the Colombian Government the company said they were not manufactured for the War Department but for the Navy, and that they had the consent of the Chief of the Navy Ordnance Bureau to dispose of them to the Colombian Government.

The contractors' statement as to the guns having been designed for the Navy rather than the Army is said at the War Department to have a probable basis in fact, except that it is understood the tubes were forged for the War Department and subsequently diverted to make a delivery to the Navy Department. On receipt of the contractors' reply, Secretary Root referred the case to General Buffington, Chief of the War Ordnance Bureau, for a report, which has since been made and which is unfavorable to the contractors. The case now comes before Secretary Root in connection with an important decision recently rendered by the Comptroller of the Treasury, who is the chief accounting officer of the United States, which in effect is as follows:

#### The Power to Reseind or Alter Contracts.

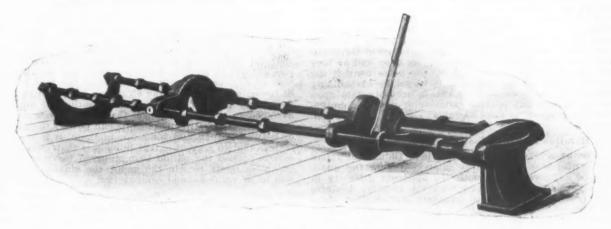
"The power vested in the head of an executive department to make contracts for work or material does not imply the power to rescind or alter such when made unless the change is for the benefit of the Government. There are two conditions precedent necessary to authorize the modification of a written contract—to wit: 1. A new and valuable consideration; 2. That it must be done before breach of the contract. The essential question is whether the modification was of disadvantage to the United States, or an unnecessary surrender of any substantial rights of the United States. If so, no officer of the Government without express authority from Congress has the right to make the modification against the interests of the Government. A contract may be extended as to time—i. e., provided so as to relieve the contractor of penalties or damages—only when such modification is for the interest of the Government, and being

#### A Simple Home Made Wheel Press.

The accompanying engraving shows a simple and efficient wheel press built by Beaman & Smith of Providence, R. I., for use in their own works. The two side rods are held in a cast frame at each end. At one end is placed an ordinary jack having a stroke of 10 inches. The side rods are threaded between the jack and the opposite end to receive nuts arranged in pairs. Resting on the bars and bearing against any desired pair of nuts is the yoke, which forms a support for the work. The nuts are placed about the same distance apart as the stroke of the ram, several pairs being used in order to save time in adjusting the machine for work of different sizes.

#### Our Population.

The total population of the United States is 76,295,-220, according to a Census Bureau bulletin issued this week. This is an increase of 13,225,464 over the enumeration of 1890. The percentage of increase is 20.90. The figures are in excess of the estimates made by competent observers, which ranged from 70,000,000 to 75,000,000. It is the largest actual increase occurring during any decade since the first census in 1790, when the population of the nation was 3,929,214. The growth from that modest figure to over 76,000,000 in a little over a century is one of the marvels of our remarkable country. It is a record unparalleled in the history of the world. One hundred years ago Russia stood at the head, in point of population, of the civilized countries of the



A SIMPLE HOME MADE WHEEL PRESS.

based upon a new and valuable consideration. If an extension of time be granted solely for the benefit of the contractor without any new consideration accruing to the Government such extension will not relieve the contractor of his obligation to pay any penalties or damages provided for in the original contract. As time is usually an important element considered by bidders in fixing the price for a piece of work, it is fair to presume that bidders name a higher price for completing work covered by a given contract than would be named were it understood that a longer time would be granted the successful bidder. To give such successful bidder additional time after the award has been made, and without adequate consideration, is an undue advantage in favor of the successful bidder, if not an actual fraud upon the other bidders."

In view of the foregoing, Secretary Root will undertake to decide: 1. Whether the Driggs-Seabury Company have forfeited their contract by reason of their action in making deliveries to the Colombian Government while in default upon their orders from the War Department; and 2, whether the Department has authority to grant extensions upon existing contracts without "a new and valuable consideration," and after "the breach of the contract." As this latter question, especially, is of great interest to all contractors, the Secretary's action will be awaited with much interest.

W. L. C.

Edw. O. Miles & Co., 278-298 Marietta street, Atlanta, Ga.. announce the change in the name of their business as dealers in scrap iron and old metals to that of the Atlanta Junk Company, and that they have also bought out the Fulton Junk & Paper Company. Jno. W. Russey, the former main owner and manager of the purchased company, is to be retained as manager of the junk department of the new firm.

western world, while the United States took lowest rank. At the end of the century Russia remains in the same position, while the United States has risen to the second place. But if the advance in material well being and industrial achievements of the people is taken into consideration, it will be found that this country has forged ahead into the first place by a long interval. Taking the population of the country by States, it is shown that New York stands easily at the head, with a population of 7,268,009, Pennsylvania coming second with 6,301,365 inhabitants, Illinois third with 4,821,550, Ohio fourth with 4,157,545, and Missouri fifth with 3,107,117. These States keep in the order in which they stood ten years ago, but Massachusetts gives up her place as the sixth most populous State in favor of Texas, which has advanced to within 59,000 of Missouri. In the far West, some of the small States show remarkable rates of increase, Idaho's growth being 92 per cent., that of Montana 84 per cent., North Dakota 75 per cent., and Wyoming 53 per cent. On the other hand, Kansas has gained only 3 per cent., and Nebraska 1 per cent., while Nevada shows an actual loss in population. New Jersey makes the best record in the East, with an increase of 30 per cent., New York's growth being 21 per cent., and Pennsylvania's 20 per cent. The New England States have made comparatively little advance. In the South, Florida has grown 35 per cent. in population, while Mississippi, Georgia and Alabama have each gained about 20 per cent. The other Southern States fall far behind these figures. Illinois and Wisconsin, in the Middle West, have increased 23 per cent., Iowa 17 per cent., Indiana 15 per cent., and Ohio only 13 per cent.

According to reports from the Straits Settlements several reefs with payable gold have been discovered in Burmah.

#### The Fuel Problem of China and the Far East.

BY F. LYNWOOD GARRISON, PHILADELPHIA, PA.

Since the existence of reasonably cheap fuel is neces sary to the maintenance of modern commercial and manufacturing enterprises, it is evident that this question must be carefully studied before an accurate idea may be obtained of the industrial possibilities of China.

It is well known that the coal fields of China are extensive, but it is difficult to appreciate their vast size and the extraordinary fact that with but one exception not an operating colliery exists in Chinese territory. This exception is the Kaiping mine in the province of Chili, which is connected with Tientsin and Taku by railway. These mines produce an excellent coking coal, containing on an average not over 7 per cent. ash, whereas the Japanese coal carries as much as 20 per cent.

Numerous native diggings exist all over the coal areas of China, but although their output in the aggregate may be considerable, they are of the most primitive character, being simply narrow drifts or pits driven into the hill sides, in which operations are suspended when the water level is reached. They are of no commercial importance and supply only a limited local demand. It is a curious fact that the very steamers carrying the enormous commerce of the Yangtse Valley use imported coal to propel them up and down a river whose course for hundreds of miles runs through great coal fields.

#### Imports of Coal,

The imports of coal into China in 1899 amounted to 859,370 tons, valued at 5,396,671 taels, or 4,669,569 gold dollars. Of this amount 610,564 tons went to the port of Shanghai. The imports in 1898 were 730,606, thus giving an increase for 1899 of 128,764 tons. The quantition tity of Chinese coal produced it is impossible to determine, but it was probably not over 500,000 tons in 1899, and of this amount 112,245 tons of Kaiping coal was brought to Shanghai. Most of the coal used in the coast-ing trade and foreign steamers is Japanese, and as they all aim to supply themselves at the ports nearest the mines, Nagasaki for instance, it would be exceedingly difficult, if not impossible, to obtain accurate data upon which to base any reliable estimate of the consumption for this purpose, at least as far as Chinese trade is concerned.

#### Relative Cost of Imported and Domestic Coal,

During a recent protracted visit to China and Japan the writer was unfavorably impressed with the quali-ties of Japanese coals, with the apparent difficulty in supplying the demand, and with the clumsy, wasteful and primitive methods of handling and coaling ships at Nagasaki. The average wholesale price of Japanese coal in Shaghai last winter and spring was between six and seven taels (\$4.40 to \$5.10 gold) per ton; it is now probably somewhat higher. It is certain that bituminprobably somewhat higher. It is certain that bituminous coal from Central China can be delivered at Shanghai for less than 2 taels per ton (about \$1.50 gold) and anthracite from the Yangtse Valley at 2 to 3 taels (\$1.50 to \$2.20). The writer believes this estimate to be well within bounds, if indeed it could not be reduced 50 per cent. Though no deep level mining has been done in Central China and as coal from near the surface is seldom as good as that lower down, the writer has seen and analyzed a number of samples of excellent coals and analyzed a number of samples of excellent coals from the lower Yangtse Valley and adjacent districts. These coals were both anthracite and bituminous, the former running as low as  $2\frac{1}{2}$  per cent. of ash and in other respects quite as good as similar coal from Pennsylvania; the bituminous is both coking and non-coking, and between the two classes a variety that may be considered as semianthracite, containing as much as 10 per cent of ash.

#### Anthracite Coal.

It is likely that the aggregate area of the anthracite coal fields in China is the largest in the world, while the bituminous fields, if not equal in extent to those of the United States, cannot be far short both in area and variety. It may not be generally known that anthracite is, with the exception of petroleum and natural gas, the best mineral fuel in the world; it gives intense heat, no smoke, and can be used in its raw state (bituminous coal must first be converted into coke) for the manufacture of pig iron. It is better adapted than any other coal for the generation of both fuel and illuminating gas; in short, as we well know in Eastern Pennsylvania, it is the king of coals!

#### Natural Gas and Petroleum.

In the great and rich province of Szechuen natural gas is found and largely used in the evaporation of brine at the salt wells. As both brine and natural gas are usually found accompanying or at least near by the troleum deposits of Pennsylvania and elsewhere,

may naturally expect to find petroleum in Szechuen, and doubtless it will be, when once a systematic search is made with this end in view.\* It is evident that China is bountifully supplied with mineral riches, not so much in ephemeral and uncertain gold and silver deposits as in good substantial coal and iron resources, which, when rightly used, are sure to make a nation great and strong. Copper, lead, mercury, antimony and zinc are found in numerous localities throughout the Empire, but as yet the extent and value of this class of mineral wealth is undeveloped and unknown; there is good reason, however, for supposing that some of the deposits are extensive and valuable.

#### Local Consumption of Coal,

In the statistics given above of the coal consumption and imports, Hong Kong is not included, as it is British territory, but it should nevertheless be considered with China economically if not politically. In Shanghai, as in Hong Kong, there are a number of large dock yards capable of constructing ocean steamers, also cotton and silk mills, and a variety and extent of modern indus-tries that are a surprise to most visitors. Such estab-lishments are certain to spread over China and bring with them a steady and ever increasing demand for coal and iron. The total foreign trade (not including Hong and iron. Kong, but China proper) in 1890 amounted to 214,237,961 Haikwan taels (a tael equals 73 cents gold), in 1898, 368,616,483, and in 1899, 460,533,288 taels, an increase over 1890 of about 115 per cent and over 1898 of 25 per cent. It is thus plain that China's foreign trade is increasing in leaps and bounds, and that she offers at present the greatest opportunities in the world to foreign enterprise and energy.

#### Political Aspects of the Problem.

It is interesting in this connection to consider the aspect of the coal problem in the far East as it bears upon the political conditions as they now exist in relation to the foreign powers. It may be assumed, to begin with, that the possession of an unlimited coal supply is a sine qua non in modern naval warfare, and that the nasine qua non in modern naval warrare, and that the nation or nations controlling such stand the best chance of becoming masters of the situation, even though their fleets may be inferior to their adversaries. It must be assumed in the second place that if war does not actually break out between the European powers themselves or between Japan and some one of them, it is the fear of war that to a great extent influences their policy and cateris paribus the nation best prepared for war is the one most likely to win the game, the stakes of which will be of value beyond computation.

#### Japan.

All things considered, the Japanese occupy the best strategic position in the far East, their sea-girt empire stands in the same geographical relation to China that England does to Continental Europe, and as it possesses an energetic population with relatively large resources of coal and iron, the similarity is even more pronounced. Whatever may be the condition in years to come, Japan is not at present in a position to assert her power. She is a poor country. Her people have recently emerged from a condition of what may be called mediæval civilization, and their veneer of Western culture and progress is exceedingly thin. No engineer who has observed their mechanical adaptations can fail to note their lack of inventive power; the genius is not yet in the race. Their plumes are borrowed. The writer would be no true friend of these interesting and charming people if he failed to warn them not to trust over much in their new civilization. Human nature is much the in their new civilization. Human nature is much the same now as since the world began, and history shows us that nations cannot be metamorphosed in a day.

#### Japanese Coal Fields.

In common with her other mineral resources, the extent of the productive coal fields in Japan does not appear to have been very definitely determined. At present it is composed of a well developed area in the west and northwest section of Kyushu, in Southern Japan, and a large but ill defined area in Hokkaido (Yesso). The island of Kyushu supplies about 90 per cent. of the total yield. The coals of this area belong to the tertiary, not to the carboniferous formation, and are, as a rule, in-ferior in every way to the real carboniferous coal. The ferior in every way to the real carboniferous coal. The Hokkaido coal fields are true tertiary and the true carboniferous rocks of Japan on the whole are barren of coal. A great majority of the producing mines are in the southern districts, and in the neighborhood of Nagasaki. As we have already observed, this coal is not

<sup>\*</sup>As a matter of fact petroleum does occur in the deeper wells of from 1000 to 3000 feet deep. Richthofen mentions it in his report to the Shanghai Chamber of Commerce. The Jesuit missionary Abbé Huc, who traveled through the province of Szechuen fifty years or more ago, speaks of a "bituminous oil," associated in these wells with the brine. (See "A Journey though the Chinese Empire" [page 303].—Harper & Bros. New York. 1855.)

first-class, it is high in ash, friable, dirty and sulphurous; its evaporating power per unit of coal is about 7 units of water, as compared with 12 units of water for the best Welsh coal.

The total production of Japan in 1888 was 200,000 tons, and in 1897 6,000,000 tons. Prices have increased during the same period 130 per cent. Of the total production of 1897 3,500,000 tons were exported.

#### Russia.

Russia, the most aggressive and cunning power in the East, possesses coal fields in the Island of Sakhalin which are extensive and, it is said, of good quality. In addition to this petroleum is found on the same island which resembles the Caucasian in quality. Colquboun states that the present annual output of Sakhalin coal exceeds 25,000 tons and is equal to Welsh coal. According to Japanese reports, however, these coals belong to the tertiary period, hence it is likely they are no better than the Japanese coals of Kyushu. In Manchuria, now Russian territory, there are large coal fields, but as this great, and, from all accounts, very fine country of about 390,000 square miles is but little known, it is not possible to say much of their value. The best areas appear to be in the Liao-tung peninsula and on the adjacent islands.

The writer recently met in China a Russian engineer who was employed in opening up coal mines along the line of the Siberian Railway in Manchuria. He stated that the coal was excellent, and in great abundance. It is evident that Russia has in Manchuria a possession of the greatest value and importance!

#### Germany.

Some years ago a well known German geographer and geologist, Baron von Richthofen, made extended reconnoissances into the province of Shantung for the purpose of determining its mineral wealth and other resources. He found that the province, which covers some fallog source wiles contains coal fields that are likely to sources. He found that the province, which covers some 65,100 square miles, contains coal fields that are likely to become of the highest value and importance. The coal found near the surface was fairly good, and the locations were relatively near the seaboard. He appears to have been especially impressed by the excellence of the Poshan field in Central Shantung, about 100 miles northwest of the excellent harbor of Kiau-chao. As Richthofen's reports were extensively published in Germany, there can be no doubt that his Government has long cherished the desire of obtaining foothold in Shantung and seized the first pretext for so doing. In occupying and seized the first pretext for so doing. In occupying Kiau-chao Bay and its adjacent territory, Germany stole—for it was nothing else than a theft—not only a fine harbor, but a strategic position that commands what may prove the best coal fields in Northern China. This may prove the best coal helds in Northern China. This fine naval base is the only territorial possession Germany has in the far East (omitting the Caroline Islands as of little importance), but since she claims or is about to claim, the whole of Shantung, it is evident that her aggressive policy is being carried out with great intelligence and that the mineral wealth of this province will be developed by her with characteristic skill early energy. be developed by her with characteristic skill and energy.

#### France.

The French in Tongking have some excellent coal in the Hongay field. The extent of the area is unknown; it runs parallel with the middle portion of the Songkoi (Red) River. In some localities the coal is obtained by "stripping"—that is, without underground work. Most of it is anthracite of good quality and the whole area belongs probably to the true carboniferous forma-tion. The French appear to be very apathetic in the development of the resources of their colonies, for al-though the existence of these superior coal fields has been known for a number of years, little is done to de-velop them. Some of the Hongay anthracite finds its way into the Shanghai and doubtless also Hong Kong and Singapore markets and Singapore markets.

## Great Britain.

England, who has by far the largest interests in the East, controls absolutely no coal fields in China. To be sure some inferior coal occurs in India, but it is either so lacking in quality or quantity that it appears never to have been a factor in Aciattle trade. In Chica therefore so lacking in quality or quantity that it appears never to have been a factor in Asiatic trade. In China, therefore, her nearest supply is at Vancouver and home ports, and in case of war her naval stations must be supplied from these distant places. It is true she has a line of unequalled fortresses from Gibraltar to Hong Kong, but they must all be supplied with fuel from over sea.

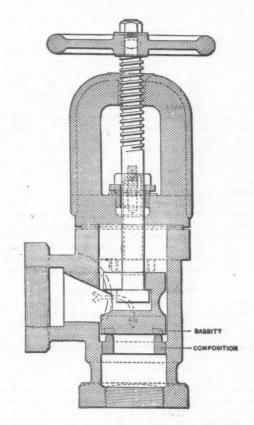
Two or three years ago a company were formed in shanghal with the purpose of exploring for coal in the British concession of Wei-hai-wel, at the extremity of the Shantung peninsula, it having been reported that coal existed there. During the month of May, 1900, the writer examined this district, only to find that the geo-

coal existed there. During the month of May, 1900, the writer examined this district, only to find that the geological formation of practically the whole concession is such that there never can be the remotest chance of finding coal or any other mineral fuel. It is evident that this company have been badly advised and are out of pocket a considerable sum of money. Gold is found pretty generally throughout eastern Shantung, but in such small quantity, and so widely distributed, it will perhaps never pay to work even with cheap Chinese labor. If Great Britain means to keep her place and trade in China, she must either insist upon maintaining the integrity of the Empire, or else take possession of the Yangtse Valley and its splendid coal fields. This, the very heart of China, is probably the richest section in coal and iron.

#### United States,

The exigencies of American politics and policies are such that it is difficult to determine what may be the future position of the United States in China. The value of American trade in 1899 was next largest to that of Great Britain and her dependencies, and our trade surpasses that of Russia, Germany, France and even Japan. To protect these great interests we have naval stations (unfortified, to be sure) at the Hawaiian Islands, Samoa, Guam and the Philippines, but as no coal is produced at any of these places, our fleets would have to rely upon exotic stores of fuel accumulated at these points. this respect we are worse off than England, since all her stations are fortified except Wei-hai-wei.

It remains in conclusion but to point out that on the fuel question Japan, of all the powers, is at present the



THE KELLY & JONES BLOW OFF VALVE.

most advantageously situated, but she lacks the sinews of war. The Eastern coal fields now in the control of of war. The Eastern coal fields now in the control of Russia, France and Germany are but slightly developed, and, in the case of Germany, not connected by railway with the seaboard. It is, therefore, evident that England is yet the master of the situation if she exerts her might, which it is to be earnestly hoped she will, in favor of the integrity of the Chinese Empire, the "open door," or free trade for all.

# The Kelly & Jones Blow Off Valve.

The blow off valve here illustrated is manufactured by the Kelly & Jones Company of Greensburg, Pa. The principle underlying its construction will be understood from the sectional view. The boiler pressure is always exerted on top of the piston, which is fitted to slide in the body. When the valve is opened to blow off the boiler it is impossible for muddy water carrying scale to pass out until the piston has been raised a sufficient disbase out that the piston has been raised a sunicient distance from its seat to prevent the cutting of the latter by any grit there may be in the water. It will be seen that before the passage is opened the piston must be raised a short distance from its seat.

# Machine Molding.

The following paper was read at the meeting of the Foundrymen's Association, Philadelphia, on Wednesday evening, 7th inst., by I. L. McCord, secretary of the Maywood Foundry & Machine Company, Maywood, Ill.:

We are all more or less familiar with the various types of molding machines that are now being offered on the market, and many of us are familiar with machines that have had their day and been discarded. It is not always a question of installing a machine that will do a given work. What we are most interested in is machines beet adapted to the individual requirements. chines best adapted to the individual requirements of our foundries. In other words, we want to know what machines will enable us to produce the best quality of castings at the least cost, and at the same time place us in the most independent position with respect to labor.

In order to consider the application of molding ma-chines to foundry work, let us analyze the work of molding into the following five principal operations:

1. Getting the flask, pattern and match board together and putting in the sand.

Ramming or compressing the sand. Removing the pattern from the sand.

4. Placing the mold on the floor.
5. Pouring the melted iron into the molds.
Of course in addition to these five operations is the riddling of sand, the application of facing to the molds, shaking out, &c., which for the present we will assume to be practically the same, whether the molds are made by head on an application.

by hand or on machines. It is principally for the purpose of reducing the cost

of the five operations mentioned that molding machines have been invented, and it is obvious that the machine which will effect the greatest saving in the aggregate during these entire five operations is the most desirable machine, quality of work, of course, duly considered.

It is a comparatively easy problem to devise a machine which will effect a saving in one or two of these

five operations. For example, on certain classes of light work patterns may be attached to metal match plates, so that they are at all times together in convenient form to set into the flasks, which may be stacked near at hand, and thus effect a saving in the first operation. Again, a machine can be readily constructed so that, regardless of the other operations, it will effect a saving in the second operation, that of ramming the sand. Likewise ond operation, that of ramming the sand. Likewise stripping plates facilitate the removal of the patterns from the sand. The molds may also be conveyed in some manner direct from the molder to the cupola for pouring, and a saving thus effected in operations four and five. But to effect a saving at one point without increasing the cost at some other point is the perplexing question.

#### Where to Reduce Cost.

Molding machine makers have not always agreed upon the proper point at which to undertake to reduce cost. Some of them have taken the position that the greatest saving can be effected by ramming the sand automatically and rearranging the remaining operations to accommodate a machine for power ramming. Others have gone a step further and combined stripping plates with power rammers. But it has only been on certain special classes of work that such machines have been entirely successful. It must be admitted that there is some work where the ramming of the sand is the biggest part of the job, but aside from very light work or very heavy work it will be found ordinarily that the drawing of the pattern and the work incidental thereto consumes by far the greater portion of time, besides requiring the greatest amount of skill.

A few years ago I visited one of the leading foundries A few years ago I visited one of the leading foundries in Philadelphia and recommended a stripping plate molding machine for large gear wheels, on which this foundry runs one or two floors pretty much the year around. During my interview with the proprietor and foundry superintendent they challenged my statement that the machine which "merely drew the pattern" would enable machine which "merely drew the pattern" would enable two men to put up 40 of these gears per day, against 12 which a molder and helper were putting up at that time. To prove the point we went into the foundry and timed the men, finding that it took 35 minutes to complete a mold; exactly seven minutes of which time was consumed in shoveling sand into the flask and ramming up the mold; the remainder of the time was consumed in shoveling the constitution of the time was consumed in the remainder of the time was constituted. the mold; the remainder of the time was expended in drawing the pattern, patching and slicking the mold, &c., showing that in this particular instance the handling of the sand and the ramming consumed about one-fifth of the entire time spent on the mold. This was perhaps an exceptional case, because the gear was rather a difficult pattern to draw without breaking the corners of the mold, but it serves to call attention to the fact that foundrymen may be unaware of the precise condi-tions regarding a given pattern unless they have made a careful investigation and noted the various stages of the

work incidental to molding. On the gear in question, if 75 per cent. of the labor of ramming the mold could have been saved, it would only have saved 15 per cent. of the total cost of molding the gear.

#### Early Power Ramming Machines.

The first successful molding machines introduced into this country embodied the simple stripping plate principle. It is true they were crudely constructed and designed to receive only the simplest of patterns, but the stripping plate principle began to be recognized as the best means of securing a clean, clear cut mold, although the lack of experience in the preparation of the special patterns required for such machines prevented a very general introduction of these machines throughout the country. Some of the larger foundries built and installed these simple machines and immediately began to devise some scheme for pressing the sand into the flasks. that moment development of machine molding along practical and simple lines received a severe set back. Several prominent manufacturers put upon the market several prominent manufacturers put upon the market about the same time large steam actuated or pneumatic machines, and in fact the poor little simple stripping plate machine was entirely forgotten in the efforts of these manufacturers to construct machines designed to entirely dispense with molders. No doubt most of the gentlemen present whose experience dates back 15 years will recall one or two of these systems with which their sponsors proposed to revolutionize foundry methods. At that time the power ramming molding machines had that time the power ramming molding machines had reached their zenith and the audicious claims made for these machines were only equaled by the complacency with which their manufacturers demanded fortunes for installing them. Many of the large agricultural implement concerns installed these systems, comprising large power ramming molding machines in connection with conveyors for automatically handling the sand and flask to and from the machines. Ingenious platens were devised to insure uniformity in ramming, and withal these to and from the machines. Ingenious platens were devised to insure uniformity in ramming, and withal these systems were most elaborate and complete. You remember them? To-day these machines are scarcely ever seen except now and then in an antiquated foundry, where they give testimony to the utter failure of a beautiful theory. Many of the same foundries that installed the systems mentioned went back to the simple machines, and are now using stripping plate hand ramming machines, which enable them to turn out a far greater tonage to the number of men employed than they could pos-sibly have done or did do with their power ramming machines.

Edgar Penney, general superintendent of Frick & Co.'s large works, at Waynesborough, Pa., discussed before the twenty-first meeting of the American Society of Mechanical Engineers, held in Cincinnati in May, 1890, his experience with what was probably one of the best power ramming molding machines of the day, wherein the patterns were divided in halves and placed on either ride of an interpretation the fleeks being placed on either the fleeks being placed on either the fleeks being placed on either the fleeks being placed. side of an iron plate, the flasks being provided trunnions. In operation the plate was clamped between the two parts of the flask, the whole being placed on a counterbalance platen with the cope side up. The sand was shoveled into the cope and the top platen forced down against the mold by mechanical means. Upon down against the mold by mechanical means. Upon raising the top platen and also the flask on its trunnions by means of a foot lever, the mold was turned over by its own gravity, the operation being repeated on the drag part of the flask, and the mold then passed to a molder, who separated the two parts of the flask, removed the plate with its patterns, closed the mold and passed it on to be deposited either on the floor or on a conveyor which carried it past the cupola for pouring. Withal this macarried it past the cupola for pouring. Withal this machine appeared to be exceedingly simple and rapid of operation, and undoubtedly accomplished in a satisfactory manner the purpose for which it was intended-namely, ramming the sand. In comparing results ob-tained from this machine with hand work, it appears tained from this machine with hand work, it appears that a molder and a boy put up 33 snap flasks per day on the bench. With the machine one man and two boys put up 168 molds. The entire saving thus effected was directly attributed to ramming the sand on this machine. Nothing was said by Mr. Penney of the cost of bringing the sand up to this machine or the cost of taking the sand away from the machine and depositing it on the floor, and nothing is said of the amount of skill required. floor, and nothing is said of the amount of skill required on the part of the man who removed the plate and pattern from the mold. We could show you hundreds of cases where a much greater output has been reached by simple hand ramming stripping plate machines, which do not require the sand to be brought to them, and in fact require no extra handling of sand and flasks beyond what would be necessarily required if the molding were what would be necessarily required if the molding were

done by hand.

I know of a malleable iron foundry making railroad draw bars on a machine with a large revolving table for conveying the molds around to a convenient point for pouring, and with power ramming devices for compressing the sand. This foundry has accurately figured that it costs them just 2 cents apiece more to mold their draw bars on this machine than it costs to mold the same draw bars on the floor by hand, and their only apparent reason for continuing to operate the machines is to get more uniform castings. Whether the machine accomplishes this result in a satisfactory manner I have been unable to ascertain.

#### Hand Ramming Stripping Plate Machines.

I know of a foundry making railroad brake shoes on a well-known type of molding machines, wherein the machines draw the patterns through stripping plates, and the molds are rammed at one stroke by compressed and the molds are rammed at one stroke by compressed air. This foundry is about 75 feet wide, and the molding machines are arranged in a row about 15 feet from one side of the building. In operation two men work at the machines while one man works on the floor setting cores and inserts and closes the molds. The floors are started near the opposite side of the foundry from the machines, and the first molds are carried by the machine operators a distance of nearly 60 feet. As a result of the time consumed in carrying the molds away from the machines this force of three men in ten hours' continuous chines this force of three men in ten hours' continuous operation are able to place on the floor 330 molds, or 110 molds per man. This same foundry installed some hand ramming stripping plate machines a few years go, fitting up for them precisely the same patterns as those on the pneumatic machines. The hand ramming machines were operated by two men, who were able in ten hours' continuous operation to place on the floor 225 molds. It will be seen, therefore, that practically the same output was obtained from the hand ramming machine per man as from obtained from the handramming machine per man as from the pneumatic machine. The castings made on the hand ramming machines, however, were cheaper, because the pneumatic machines consumed a considerable amount of compressed air, and also required a considerable amount of repairs for the reason that the enormous pressure required to ram the molds on the machines racked them to pieces very rapidly.

There is a foundry near Cleveland in which large quantities of drop hangers are made, some on pneumatic machines and others on hand ramming stripping plate

quantities of drop hangers are made, some on phenimatic machines and others on hand ramming stripping plate machines, and this foundry has figured that the same output practically can be obtained from the hand machines as from the pneumatic machines. I know of one or two other foundries making drop hangers, boxes and work that have discarded pneumatic machines

and installed hand ramming machines.

One of the large manufacturers of pipe fittings in Chicago has in use a very elaborate system of machines and conveyors which for their particular class of work has proven quite successful, yet these people have for some time been investigating other systems, and it is a question whether they are now producing their castings at a less cost then others who are equipped with ordinary at a less cost than others who are equipped with ordinary

stripping plate molding machines. There is a foundry near Pittsburgh which has had in operation for a number of years a very complete system of machine molding, a system which has been looked to by founders everywhere as a model of its kind. Yet the general manager of this company recently assured me that if they were now for the first time putting in molding machines for their work they would probably not install a system such as they at present

Of course it may be argued that the particular instances herein cited do not fairly condemn power ramming machines, since there may have been especial conditions which in the arrangement of the machines and their operation prevented the attainment of the best results. but it should be borne in mind that the conditions in these foundries under which the power ramming machines were operated were precisely the same as the conditions surrounding the hand ramming stripping plate machines. We do not contend that power ramming machines are a failure in all respects. A great many foundries are using them to-day, and producing large quantities of castings of good quality, and at a less cost than the same castings could be produced by hand. But we have yet to find a single foundry that is producing castings as cheaply on power ramming machines as the same castings can be produced on hand machines. We submit, therefore, that in the face of such testimony we are justified in claiming the superiority for the hand ramming stripping plate machines. We are giving you not alone our views, but the experience and judgment of those who have made a careful and thorough study of machine molding for years.

# Disadvantages of Power Ramming Machines.

A power ramming machine must of necessity remain A power ramming machine must of necessity remain in one position, or on one fixed foundation. Therefore, without some accompanying scheme for handling the molds to and from it, the machine will frequently cost more to operate than it will save in the one operation of ramming the sand. It is, of course, a very difficult matter to arrive with any degree of accuracy at the amount of the increased handling of sand and flasks which may

be properly chargeable to the machine, especially where several machines are being operated at the same time and are turning out different kinds of castings. However, it is a pretty safe proposition that it costs more to move a ton of sand a given distance than it does to move a ton of iron, no matter whether it is wheeled in a wheel-barrow, carried on the back or conveyed by automatic carriers. It certainly costs very much more to move sand and flasks from the floor to the machines and back again in the form of molds to the floor or cupola for pouring than it does to move the machines along with the work and convey iron one time from the cupola to the

Another point upon which we believe the makers of power ramming machines are pursuing the wrong track is in their endeavors to secure uniform ramming of the molds. If we have a machine that will successfully ram the sand in a mold uniformly we have a machine which is limited in its uses, because there are only certain patterns with which the best results can be obtained by equal pressure. It is not uniformity that we need. The unequal pressure of the fluid iron against the walls of the mold, the irregular surface of the casting, and the varied thickness of the different sections of the casting, the iron setting much more rapidly in some sections than others, and requiring less density of the sand to admit of the free and rapid escape of gases, are one and all conditions which must be met by the exercise of a molder's knowledge. These are some of the very things which a molder must master before he becomes proficient at his trade. We claim, however, that the hand ramming stripping plate machine may be adapted to any pattern which ping plate machine may be adapted to any pattern which it is possible to mold by hand, because the machine permits the exercise of the same degree of intelligence that is necessary in making molds by hand. We do not mean by this that the stripping plate machine requires at all times a competent molder to operate it. The stripping plate machine goes further. It enables men of ordinary intelligence to very quickly acquire the amount of skill which is necessary to make molds. The utility of the hand ramming stripping plate machines lies in the great which is necessary to make moids. The utility of the hand ramming stripping plate machines lies in the great flexibility of the system. There is practically no limit to the range of work which can be made on such machines, and the limit is only reached when ingenuity is no longer able to devise a scheme for attaching the patterns.

#### The Initial Cost of Stripping Plate Machines.

One great objection that has been raised to stripping plate molding machines has been on account of the initial cost of the patterns and stripping plates. These cost money, as we all know, but since they have proven to be better and to enable the production of better castings and cheaper castings, the first cost ought to be compared with the results. We do not believe that a machine of any kind can be too good. You might install a traveling crane in your foundry and save a great deal of the initial cost by omitting one of its motors and arranging to haul it back and forth in your foundry with a cable and a team of horses, but you will not think of doing such an absurd and idiotic thing. If your work requires the addition of a traveling crane you want the most modern tool that you can buy with the highest practical speed and greatest reliability and \$500 or \$1000 in the original cost will not prevent you from having it. From this same standpoint, if you have quantities of castings that are duplicated to an extent to require molding machines at all, you cannot afford to operate any other than the best machines your money can buy. If your castings do not run into sufficient quantities to warrant the expense of stripping plates then from an economical standpoint you had better make them on the bench or floor.

# Manning the Machines.

I have seen instances where satisfactory results have not been obtained from stripping plate hand ramming machines, and it was usually not difficult to trace the cause of failure to its true source. I recall one instance where a set of machines went into a foundry, and about four weeks thereafter the superintendent reported that he had been unable to make much progress with the ma chines, and in fact could not begin to turn out the amount of work that had been represented. Upon investigation it developed that the first week the foreman had placed two men on the machines, whose only experi-ence around the foundry had been unloading pig iron and wheeling sand. The result, that might have been and wheeling sand. The result, that might have been expected, was that about 50 per cent. of their work had to be scrapped.

The next men put at the machine did but little better. and then the foreman related how in desperation he had "finally put the best molder he had in the shop" at the machines, and while this molder had done excellent work, the had failed to put up any more flasks on the machine than he could have done by hand. Here we have had a complete explanation of that foreman's failure to make a success with his machines. Green men should always be under the direct and careful supervision of the foreman personally until they learn their job. It will not do to leave them to the tender mercies of their own ignorance nor to the wily persuasion of the molder who may be working on the next floor. Our experience has taught that the best men to put at molding machines are helpers who have some knowledge in a general way of foundry work, and who are endowed with sufficient intelligence and memory to do precisely as instructed. They should have minds of their own, and they should appreciate that it is a promotion for them to be put at the machine. Doing a general jobbing business there are times when we have no orders running into quantities. At such times we use our machine operators at ordinary laboring work and pay them \$1.50 per day. When we get an order for a few hundred castings of one kind we fit up the patterns for machines and these men are always ready and waiting for such jobs, and usually ask the foreman in advance if they can have them. When operating the machines the men are able to earn more wages than they otherwise could, as we put them on piece work, and so find that we are seldom bothered about getting men to operate our machines.

## The Quality of Molding Sand.

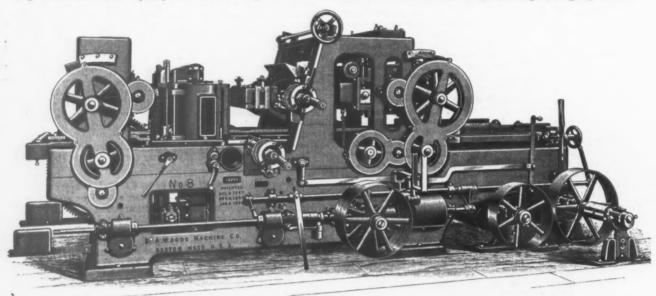
I have seen some instances where hand ramming, as well as other molding machines, have not been entirely successful on account of the peculiar qualities of molding sand used. It may not be apparent at first thought that sand which might answer the purpose in hand molding would not work equally well on molding machines.

matic sand rammer to be used in connection with our machines, which enables the machine operators to exercise the same degree of intelligence in ramming their molds that they can when using ordinary hand rammers. This rammer combines both butt and pein ends, and in operation can be reversed at pleasure for tucking around the corners of the mold as well as "butting off." This rammer will not only enable the operator to ram up from three to four times the amount of flasks that he could by hand, but it leaves him about as fresh at the end of his day's work as he was at the beginning; since the only energy he is called upon to expend is in guiding the machine and directing and controlling the blow.

his day's work as he was at the beginning; since the only energy he is called upon to expend is in guiding the machine and directing and controlling the blow.

The hand rumming stripping plate machine has proven itself to be the best molding machine for all around purposes, and we submit that in connection with the pneumatic sand rummer this equipment represents the highest standard of efficiency as well as the most modern development of machine molding. Of course, all foundries are not equipped with air, but most foundries that make sufficiently large quantities of castings to justify the use of molding machines have compressed air plants.

There are many questions that have been discussed in connection with molding machines, such as the division of labor—that is, having one force of men operate the machine all day, and another gang do the pouring. We believe these are matters that can best be adjusted by foundries individually. In many instances it is no doubt more economical to have a separate gang of men



THE WOODS PLANER AND TIMBER SIZER.

But if you will bear in mind that a molder at the bench or on the floor can roll his flask over, and always lift his pattern up out of the sand, whereas on a molding machine the pattern is usually drawn down, it will be seen that the sand for machine molding ought to have the greatest possible bond. It also sometimes happens that the quality of the sand may be satisfactory and that the tempering and mixing, having been done by the same green and inexperienced men placed upon the machines, is at fault.

Toughness and porosity, the chief requirements of good molding sand, depend equally upon proper mixing and uniform ramming. If the mixing and tempering of sand is left entirely to inexperienced laborers rough castings with uneven surface may result from this source, instead of from the quality of the sand or improper ramming of the mold. Therefore, in order to obtain the best results in machine molding, wherever it is possible mechanical mixers ought to accompany the machines. There are several good sand mixers on the market and they are inexpensive.

## The Pneumatic Sand Rammer.

I have mentioned some of the popular objections to hand ramminog machines, but there is another and far greater objection that has been raised in almost every foundry that has installed this type of machines. If you will go into foundries like that of the McCormick Reaper Company of Chicago and watch the men at work on hand ramming machines, you will wonder that they are able to stand up to the machines for a whole day and turn out the quantity of work which you see them putting on the floor. It is a fact that the man's job who is unloading pig iron is a sinecure as compared with that of the machine operator. In order to meet this objection to the hand ramming machine we have devised a pneu-

for pouring. In most cases, however, where you are trying to get along with laborers for molding, we think it a good plan to have them pour their own work. There are not so many men to educate, and besides the relief from the monotony of molding on the machine is a good thing for the men. They will feel themselves capable of doing more than one thing and will take more interest in their work. The fact that they may sit around a few minutes after the blast goes on is not going to count against them. They will not do one whit more work in a day without that little rest than with it. There are some progressive factories in other lines of business that give their employees 15 minutes' recess both in the forenoon and the afternoon, which takes a half hour out of their working day, but they consider it a good investment. And I do not believe any foundry will lose money by allowing their molders a short "breathing spell" from the time the blast is put on until they get their iron.

As stated, however, we do not believe these are matters which necessarily belong to a discussion of molding machines.

The reading of the paper was followed by a number of lantern views showing molding machines, whose special uses were described.

# The Woods Planer and Timber Sizer.

The planer and timber sizer built by the S. A. Woods Company of South Boston, Mass., is adapted to a wide range of work, varying from matching boards to squaring timbers up to its full capacity. Among the new features of the machine is the special wedge platen adjustment, by which the bed plate beneath the top cylinder, with the lower carrying in rolls and boxes, may be raised or lowered together and securely clamped, to obtain more

or less cut to the bottom cylinder—such change being easily accomplished from the feeding in end. The advantage of this adjustment will be apparent when it is realized that the surface cut may be distributed at will between the top and bottom cylinders, and without disturbing the cutter heads or rolls, or changing the finished thickness of the lumber. By special arrangement or location of cutter heads on this machine a long, rigid platen is afforded the top and bottom cylinders, insuring superior planing to both surfaces. The bar, after the top cylinder cuts, acts as an overhead platen for the under cylinder, moving with the top cylinder at all times unless special adjustment is required. The machine is provided with power hoist, by which the entire train of rolls and upper cylinder may be adjusted simultaneously, or the top carrying in rolls may be detached and operated simultaneously, when necessary to take an extra heavy cut.

The upper cylinder and yoke may be adjusted independently by hand if desired, and are locked firmly in place by a lever at the feeding in end, which is so placed that the power hoist cannot be operated until the cylinder yoke is released.

yoke is released.

All the feed rolls are weighted from below, leaving the upper works entirely free from overhead weights or springs. Both surface and side head chip breakers, and also the pressure bars, are provided with sufficient expansion to permit of swinging overhanging cutters. Square jointer or matcher heads may be used on the side spindles, the matcher heads being provided with vertical adjustment, notwithstanding that the spindles are equipped with top bearings of heavy and efficient character. Accessibility is facilitated by the manner in which the chip breakers and spouts are hung, that permit of swinging to one side; piping to exhaust is also facilitated by the location of these works. The side head frames are clamped into place by a locking device, and are so



Attachment in Place

# The Brown & Sharpe High Speed Milling Attachment.

The high speed milling attachment made by the Brown & Sharpe Mfg. Company of Providence, R. I., is intended for their Nos. 1, 1½, 2, 3 and 4 universal and Nos. 1, 2, 3 and 4 plain milling machines. It is designed for light or finishing cuts with end mills. The attachment is simple in construction; there being no auxiliary fixtures or extra belting required for attaching the device to the machine, and as many changes of speed can be obtained as there are changes for the main spindle of the machine. The spindle is hardened and ground,

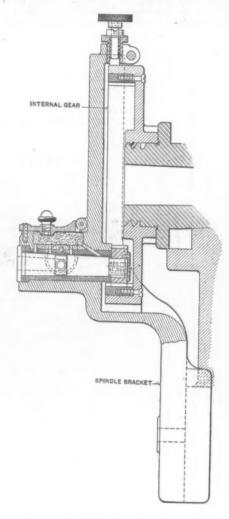


Fig. 2. - Vertical Section Parallel with Spindle.

# THE BROWN & SHARPE HIGH SPEED MILLING ATTACHMENT.

hung that they may be readily removed from the machine by unclamping, and without disturbing the screws or other connections.

or other connections.

A scale is provided, which facilitates quick and accurate setting for desired width. The feed may be stopped or started from the feeding in end or working side. The feed rolls, six in number, are 9 inches in diameter and are driven by gearing, insuring positive results under all conditions; the two top carrying in rolls are divided into two sections, and have chip breakers to conform. A center guide is furnished, and removable spring lever guides for holding stock thereto. All cutter head and side spindle pulleys are of the pneumatic type, used only by this company. The machine is built to work 24 inches or 30 inches wide, 14 inches or 16 inches thick.

The American Sheet Steel Company have paid to the Board of Trade at Coshocton, Ohio, \$21,408, the cash value of lands donated to the Coshocton Rolling Mill Company, who were taken over by the American Sheet Steel Company. The plant has not been operated for some time, and as the agreement with the city was that the plant was to be operated continuously for 15 years, it has been decided to return the bonus.

runs in a bronze bearing provided with means of compensation for wear; and is driven by an internal gear that is screwed onto the cone spindle of the machine, and meshes with a pinion on the spindle of the attachment, as shown in the section, Fig. 2. The mechanism is inclosed and protected from dirt and injury. The speeds obtained with the different machines range from 354 to 1800, the Nos. 1 being 354 to 1591, the Nos. 1½ and 2 being 657 to 1721, the No. 3 universal being 643 to 1462, the No. 3 plain 571 to 1670 and the No. 4 being 504 to 1800.

The Chillcott-Evans Chain Company, Allegheny, Pa., manufacturers of chains for all purposes, have received an order from a New York steamship company for 150 to 200 feet of ship chain. The links in this chain will be 2½ inches in diameter; each link will weigh 52½ pounds to the foot, and will be 12 inches long. This is one of the largest orders for heavy chain placed for some time.

The Navy Department has decided to locate the new dry dock at the Brooklyn navy yard between the present docks, Nos. 1 and 2. The new dock will cost \$1,000,000.

# The Dominion Iron & Steel Company, Limited.

Probably no undertaking in recent years has attracted more attention, internationally, in the iron trade than that of the Dominion Iron & Steel Company, Limited, of Sydney, C. B., because the favorable conditions underlying it came to the majority as a revelation. Briefly these are a low cost of assembling, at tidewater, of cheap raw materials, fair in quality, so that pig iron and steel may be made at astonishingly low figures, to which must be added the fact that during the early years of its career the enterprise will enjoy the very liberal bounties granted by the Dominion of Canada. Under the management of A. J. Moxham, formerly identified with the Johnson Company and the Lorain Steel Company, the

Sir Wm. C. Van Horne, Montreal. Robert Mackay, Montreal. R. B. Angus, Montreal.

The Dominion Iron & Steel Company, Limited, have acquired by purchase iron ore property on Great Bell Island, in Concepcion Bay, Newfoundland, about 35 miles from St. Johns. This island, which is about 8 miles long and 2 miles wide, has exposed on the cliffs of its northern side five beds of ore, of which three, however, extend over so small an area and are so thin that they are of little commercial value. The two others are known as the upper and lower beds and constitute the

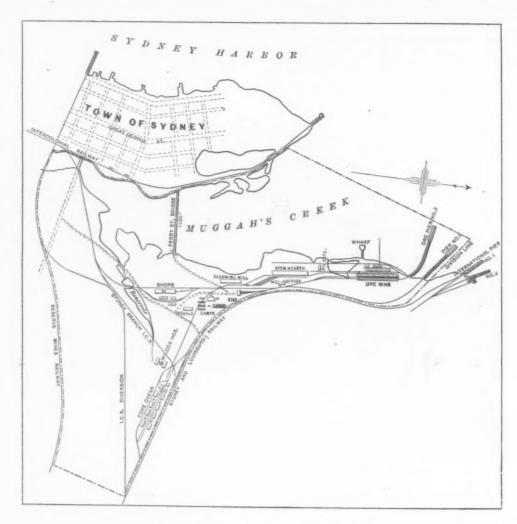


Fig. 1 .- Location of the Works on Sydney Harbor.

THE DOMINION IRON & STEEL COMPANY.

very latest metallurgical improvements and appliances have been adopted, so that it may be regarded as a model

The company are one of the creations of Henry M. Whitney, who has been deeply interested at Sydney, Cape Breton, for some years in the development of the

Dominion Coal Company.

The Dominion Iron & Steel Company, Limited, of Sydney, C. B., have a capital stock of \$15,000,000 and are authorized to issue \$8,000,000 of first-mortgage bonds, of which \$6,000,000 5 per cent. bonds, payable July 1, 1929, have been issued. The Board of Directors consists of:

H. M. Whitney, Boston, president. A. J. Moxham, Sydney, C. B., vice-president and general mana-

A. J. Moxham, Sydney, C. B., ger.
H. F. Dimock, New York.
Hon. George A. Cox, Toronto.
B. F. Pearson. Halifax.
Hon. David McKeon, Halifax.
J. S. McLennan, Boston.
Elias Rogers, Toronto.
James Ross, Montreal.
W. B. Ross, Halifax.
Almeric H. Paget, New York.

The lower bed was purchased by the Wabana mine. Dominion Iron & Steel Company from the Nova Scotia Steel Company, who still control the upper bed. This deposit was described in detail by R. E. Chambers some years since in the columns of *The Iron Age*. Since then a shipping pier has been built on the southern side, where there is a very good harbor. Near the island there are a shipping pier has been built on the southern side, where there is a very good harbor. Near the island there are 48 to 84 feet of water, the bay being navigable from eight to ten months in the year. The dock has ten pockets of 200 tons capacity, each at a hight sufficient to discharge into a steamer by gravity. Boats of 5000 tons capacity can be leaded in about five hours. The harbor is located about 425 miles from the works at Sydney. The ore has been mined since December, 1895, considerable quantities having been shipped to the United States and to Europe. During the year 1899 the shipments were and to Europe. During the year 1899 the shipments were about 300,000 tons, and the mines are now equipped with conveyors, steam shovel, bins, &c., of sufficient capacity for the mining of 6000 tons of ore per day when required. It is estimated that the cost of mining and loading on vessels for some years to come will not be over 50 cents per long ton, and that at no time should the cost

exceed from 80 cents to \$1. It can be freighted to Sydney at a cost of from 35 cents in ordinary times to 45 cents on the higher basis of recent times. The ore, therefore, will not cost more than 85 cents as a minimum to \$1.45 per ton as a maximum, delivered in Sydney. Mr. Moxham regards \$1.10 per ton as a safe average, all told. Two recent analyses of the ore show the following, being maximum and minimum of recent cargo shipments:

Analyses of Bell Island Ore.

|            |       |   |   |   |   |   |    |     |      |      |   |  |  |  |  |   |  | Per cent. | Per cent. |
|------------|-------|---|---|---|---|---|----|-----|------|------|---|--|--|--|--|---|--|-----------|-----------|
| Moisture   |       | 0 | 0 | 0 | 9 |   | ٥. | 0 1 |      | <br> |   |  |  |  |  | 0 |  | 1.50      | 2.50      |
| Iron       | <br>0 | 0 |   | 4 |   | ٠ | 6  |     | <br> |      | 0 |  |  |  |  |   |  | 54.43     | 51.84     |
| Silica     |       | 0 |   |   |   | 0 |    |     | <br> | <br> |   |  |  |  |  |   |  | 9.34      | 13.00     |
| Phosphorus |       |   |   |   |   |   |    |     | <br> |      |   |  |  |  |  |   |  | 0.744     | 0.835     |
| Sulphur    |       |   |   |   |   |   |    |     |      |      |   |  |  |  |  |   |  | 0.05      | 0.030     |

It is estimated that the mine contains about 25,000,000 tons above sea level, with a much larger quantity in the lower levels. Besides the Wabana deposit the Dominion

| Fixed carbon. 60.45 Sulphur 1.64 Ash. 5.65 Washed coal. | 62.91 61.49<br>1.50 1.56<br>4.69 5.41 |
|---------------------------------------------------------|---------------------------------------|
| Moisture                                                | 1.08 0.84<br>33.92 37.86              |
| Fixed carbon                                            | 61.69 62.60<br>1.07 1.17              |
| Ash 3.79 Retort coke.                                   | 3.31 4,50                             |
| Sulphur 0.91<br>Ash 6.07                                | 0.78 1.01<br>5.38 6.24                |

As for the quality of the coke, that has been determined and thoroughly tested by its use in the blast furnace. The same coal has been coked on an extensive scale in the Otto-Hoffman by-product coke oven plant at Everett, Mass., a duplicate of which is now being erected at Sydney. It is estimated that the coal can be mined, washed and delivered at the furnace at a price not to exceed \$1.25 per ton.

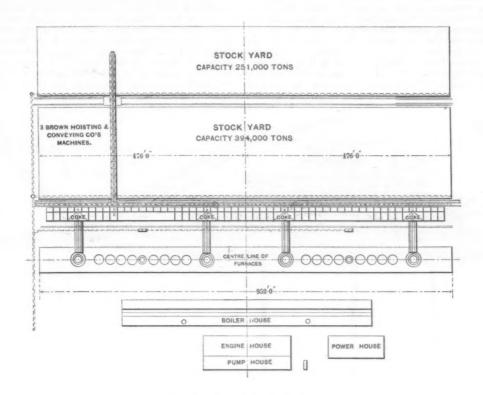


Fig. 2.-Plan of Stock Yard.

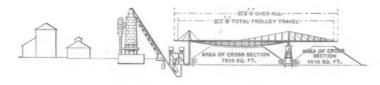


Fig. 3.-Elevation of Stock Yard.

## THE DOMINION IRON & STEEL COMPANY.

Iron & Steel Company own an iron mine in the Santiago district of Cuba.

#### Coal and Coke.

The Dominion Iron & Steel Company have the option of leasing the Dominion Coal Company, including all their mines, and the Sydney & Louisbourg Railway, on condition of paying the fixed charges and 6 per cent. annually on the common stock. The reserves of fuel in the Sydney field are enormous, it being estimated that the Dominion Coal Company control areas which can be counted on to deliver over 2,500,000,000 tons of coal. This fuel is bituminous, the following analyses showing the constitution of the raw coal, of the washed coal and of retort coke for different mines:

## General Coal Analysis.

| Raic co  |        |  |      |  |   |     |  |  |  | mine.<br>Per cent. | Caledonia<br>mine.<br>Per cent. | Dominion<br>mine.<br>Per cent. |
|----------|--------|--|------|--|---|-----|--|--|--|--------------------|---------------------------------|--------------------------------|
| Volatile | matter |  | <br> |  | 0 | 0 1 |  |  |  | .32.45             | 30.86                           | 31.89                          |

#### Limestone.

The Marble Mountain limestone quarries are located at Clark's Cove, on West Bay of the Great Bras d'Or Lakes. The quarry is at an elevation of about 300 feet above the level of the lake, and the deposit, which is a true marble, is of an especially good quality. From the quarry the stone is lowered to a crusher by a double skip car system with drum at top, the loaded car hoisting the empty. The crushed stone is fed by gravity to a 24-inch conveying belt, which carries it to an open bin at the foot of the mountain. Underneath the bin's chutes there is arranged a 36-inch conveying belt, of a capacity of about 600 tons per hour, which carries the crushed stone to an incline belt leading directly to the loading pier. This also has a capacity of 600 tons per hour, and the barges or vessels for transportation can be loaded in three to five hours. In addition to the excellent marble quarry the company have developed a dolomite quarry at George's River, about 14 miles from the works at Sydney. This quarry has a capacity of about 1200 tons per day.

#### Government Bounty.

The bounties on the manufacture of iron and steel granted by the Dominion of Canada are as follows:

|   | 2.00         |            |         |    | On br     | P III | 111       |           |
|---|--------------|------------|---------|----|-----------|-------|-----------|-----------|
|   |              |            |         |    | from      |       | from      |           |
|   |              |            |         | ns | tive ore. | for   | eign ore. | On steel. |
| 7 | To April 21. | 1902       |         |    |           |       |           | \$3.00    |
| 1 | pril 21, 190 | 2, to July | 1, 1903 |    | 2.70      |       | 1.80      | 2.70      |
|   | uly 1, 1903, | to July 1. | 1904    |    | 2.25      |       | 1:50      | 2.25      |
|   | uly 1, 1904. | to July 1. | 1905    |    | 1.65      |       | 1.10      | 1.65      |
|   | uly 1, 1905, | to July 1. | 1906    |    | 1.05      |       | .70       | 1.05      |
|   | uly 1, 1906, |            |         |    |           |       |           | .60       |

When it is considered that the present plant, as laid out, has an annual capacity of 250,000 tons of steel and of 150,000 tons of pig iron for the open market, the magnitude of these figures will be apparent. The company are also free from local taxes of the county of Cape Breton for 30 years.

#### Sydney Harbor,

The mines are located in the harbor of Sydney, the town having donated to the company about 500 acres of land within the town, the position being clearly shown in the accompanying engraving, Fig. 1. So far as the harbor is concerned the impression that Sydney is in the polar regions is far from the truth. Taking the Government reports from 1880 to 1899, they show that the earliest closing of Sydney harbor by ice was in 1880, on December 31, opening in 1881 on April 29; so that then it was

houses are neat in design and equipped with all modern improvements.

#### Fresh Water Supply.

The fresh water supply for the works is obtained from Sydney River, which is about 5 miles from the location of the works. A dam and pumping station have been constructed on this river for separating the fresh from the salt water, and the drainage from an area of 65 square miles is available for service. The dam is about 240 feet long and has a depth of 20 feet at the center of the stream. It is constructed of cribbing filled with stone; the salt water side is planked with creosoted timber, the fresh water side is sealed by means of a puddle face and gravel slope. The dam is provided with fishway and the company have constructed a lock which will allow a boat 20 feet wide, 6 feet draft at low water, and 50 feet long, to pass through during the open season of navigation.

navigation.

The pumping station is constructed of brick and is equipped with two horizontal tubular boilers of capacity of about 110 horse-power each. These are strongly built and especially designed for a working pressure of 150 pounds per square inch, built by T. A. McLean, Charlottetown, P. E. I. The pumps were manufactured by Worthington Company of Brooklyn, N. Y., and are two in number, of a capacity of 3,000,000 gallons each per 24 hours, the estimated requirements of the works for fresh water

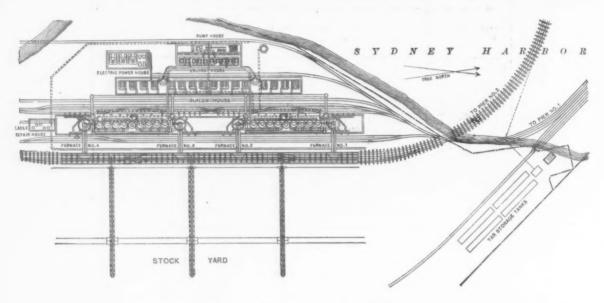


Fig. 4 .- Plan of the Blast Furnace Plant.

# THE DOMINION IRON & STEEL COMPANY.

closed four month. As a context to this the other periods of closing are as follows: 1892, harbor closed 16 days; 1894, 25 days; 1895, 6 days; 1896, 10 days; 1897, 14 days; 1898, 30 days. An average for the whole 19 years shows that the harbor was closed February 3 and opened March 14. The average closing of the harbor, therefore, is covered by 39 days. In 1900 the harbor was open the whole winter. In this respect, therefore, Sydney is better off than the lakes, upon which the American steel industry depends.

The winter shipping point of the Dominion Iron & Steel Company will be the port of Louisburg, which is open all the year round. It is about 22 miles distant as a crow flies from the works and is connected with them by the Sydney & Louisburg Railway, something over 40 miles long.

#### The Plant.

The works proper, to which these outside developments are tributary, consist in general of a plant of four blast furnaces, ten 50-ton open hearth furnaces, a 35-inch blooming mill and pit furnaces, 400 Otto-Hoffman coke ovens, coal washing and sulphuric plants and essential by-product plant, and a large machine shop and foundry capable of taking care of all mill and furnace work.

In connection with these works there is about 20 miles of railroad track, full ore handling equipment, receiving and shipping piers, and all the necessary attributes to a well equipped modern plant.

The actual work of construction has been under way

The actual work of construction has been under way about 14 months and the coke ovens and blast furnaces are expected to go into operation shortly.

The company own a tract of real estate, on which they have erected a number of houses of a better class; these

being about 3,000,000 gallons per day. The pumps are duplex, direct connected triple expansion condensing, with high pressure cylinder 12 inches in diameter, the intermediate cylinder 19 inches in diameter, the low pressure cylinder 30 inches in diameter, the plunger 16 inches in diameter—all with 24 inches stroke.

The pump house is provided with a large well, to

The pump house is provided with a large well, to which the water is admitted through intake pipe, constructed of cypress wood, leading from a crib provided with screens, and located at the center of the river. This supply is abundant and the water of an excellent quality; about 600 feet of the main line is of 36-inch pipe and the balance to the works along the roadway and through the company's property is 24 inches in diameter. All the iron is the bell and spigot pipe of the ordinary water works specifications. Connections have been provided for the town of Sydney and other consumers, in case of additional water supply being required. On the water main inside the works is located a stand pipe 20 feet in diameter, 85 feet high. Salt water will be used for blast furnace circulating system.

## The Ore Handling Plant.

The ore handling plant consists of a pier upon which will be located four holsting machines or towers of a type similar to those used on the Montreal docks for handling coal. These towers have given very satisfactory results, and are a quick machine for the handling of all heavy materials. The capacity of each tower is 1200 to 1500 tons per 24 hours. These are designed and built by the Dominion Bridge Company of Montreal. The machines are mounted on trestle work above a superstructure, upon which is provided a double track system for handling of cars. Ore is unloaded directly from the

boats to shallow bins, or hoppers, which form part of the mechanism, and the ore is delivered through these

to hopper bottom cars.

The above mentioned track trestle work leads from the pier about 1100 feet to the ore bins, which are provided with three tracks with suitable cross overs for the handling of coke, ore and limestone for the regular furnace supply, and for the storage in the stock yard. (See Figs. 2 and 3.) The stock yard is provided with three Brown Hoisting & Conveying Machine Company's traveling machines, similar to those used at the Duquesne furnaces of the Carnegle Company, and of a cross section shown in Fig. 3. These three machines have ample capacity for taking care of the storage of six months' supply of material, as well as for rehandling of stock for the winter operation of the blast furnaces.

the winter operation of the blast furnaces.

The stock yard, which is commanded by three Brown machines, has an effective width of 366 feet, and is 952

skip pit, in which the coke is fed directly into the skip car, which takes it to the furnace. There are 28 bins for use for ore or limestone, being seven for each furnace. The Brown machines are independent motor driven,

The Brown machines are independent motor driven, the span of the bridge being 225 feet and of the cantilever 105 feet. The back leg of the machine is mounted on rails 16 feet from center to center. The motors are located on the truck of the back leg of the machine, and are inclosed in a suitable engine house. The operators' house is located directly above, and on the side of the leg of the machine.

#### The Furnace Plant.

There are four furnaces built and erected under contract with the Riter-Conley Mfg. Company of Pittsburgh. The furnace stacks are 20 feet in diameter at the bosh and 85 feet high. The diameter of the hearth is 11 feet 9 inches, at stock line it is 14 feet 6 inches, and there

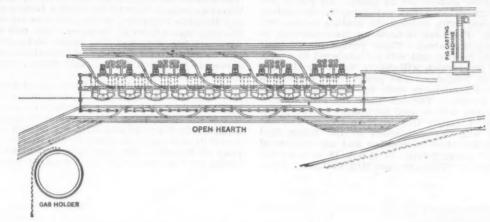


Fig. 5. The Open Hearth Steel Plant,

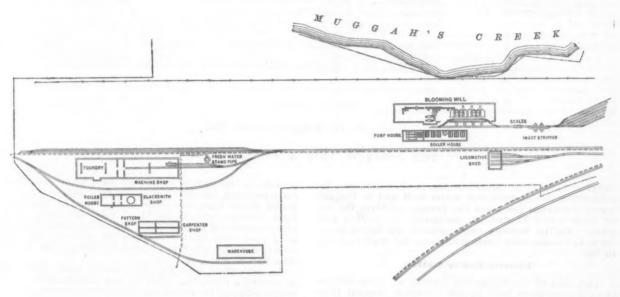


Fig. 6 .- Plan of Blooming Mill.

#### THE DOMINION IRON & STEEL COMPANY.

feet long, with tracks for an extension of 150 feet, making the available length of the cross section, shown in Fig. 3, about 1100 feet. This yard is of a capacity sufficient to take care of six months' supply of ore and limestone for four blast furnaces. The ore is brought in from the pier upon which the unloading machines are located in the before described manner and transported to the top of the bins, from whence it is dropped into the stock or storage bin, the former delivering its supply to a motor driven scale car underneath, which transfers the stock to the skip cars, or the latter, which delivers the stock to transfer cars, upon which are placed two 3-ton buckets, which are handled by the Brown machine, the stock being lifted and deposited in the yard for winter use. In the winter season the Brown machines with scoop buckets gather material from the stock pile and deposit it into the stock bins or into drop bottom cars, from which the material is transferred to the supply bins, from whence it is taken to the furnaces by the scale cars. The bins for storage are all of the same cross section and are 56 in number; there are four large coke bins over the center of each

are 12 6-inch tuyeres. Each furnace is provided with Julian Kennedy's patent top filling apparatus. The furnace shell is 28 feet in diameter at the mantle and 23 feet at the top of the furnace. The bustle pipe surrounding the columns is 46 feet in diameter. The tuyere stacks, 12 in number, are of an improved type, with ball joints and adjustable blow pipes.

The skip hoist leading from under the stock bins to

The skip hoist leading from under the stock bins to the top of the furnace is of structural steel and carries two skip cars, which rest at the bottom in a steel cased pit.

The stoves are of the Cowper type, with a casing 21 feet in diameter by 85 feet high. The stove chimneys are 9 feet in diameter inside the lining, are 200 feet high, and are provided with heavy cast iron bases and are bolted to the foundation.

The boiler house, as shown on plan, Fig. 4, is 53 feet wide and 576 feet long. It is a steel building with brick walls and heavy concrete foundations. It contains 8000 horse-power of boilers, with two steel stacks, one for each 4000 horse-power of boilers. These stacks are of

steel. 11 feet diameter inside the lining, and 200 feet high. The boilers are connected to these stacks by overhead breeching. They are of the Babcock & Wilcox type, amply strong for working pressure of 150 pounds to the square inch.

The engine house is 44 feet 2 inches span and 200 et long. It contains five pairs of blowing engines built by the E. P. Allis Company and commanded by one 30by the E. P. Allis Company and commanded by one 30ton electric overhead traveling crane. These engines each
have a high pressure cylinder 50 inches in diameter, a
low pressure cylinder 96 inches in diameter, with a blowing tub 96 inches in diameter, all of 60-inch stroke.

The pump house, which is a lean-to on the engine
iouse, is of 30 feet span, 200 feet long, and contains
three horizontal Wilson-Snyder compound direct conpacted circulating number by sing steep explications.

three horizontal Wilson-Snyder compound direct connected circulating pumps, having steam cylinders 18 and 32 inches in diameter. The bronze plungers are 24 inches in diameter by 36 inches stroke. The pumps are each rated at 6,000,000 gallons per 24 hours. All pumps are connected to an exhaust line extending to the end of the engine house, with connections leading to the condenser system. Provision is made for the connection of a fourth pump if desired. These pumps obtain their water from the harbor, and will be connected to a 20 x 85 foot stand pipe, which will supply water for circulating and cooling purposes. The pump house contains a pair of surface condensers built by the Borthey Mfg. Company of Toronto. Through these the return water from the furnaces will be used for condensing purposes. The fresh water supply line leads to the wall of the engine house and has connection to the boiler feed pumps, which are three in number and are duplex, of outside packed plunger type, 14 x 9 x 18 inch stroke. outside packed plunger type, 14 x 9 x 18 inch stroke. These were built by Wilson-Snyder Mfg. Company, Pitts-

The product of the furnaces, which is estimated at The product of the furnaces, which is estimated at 1400 tons per day, will be tapped into 50-ton ladles, from which it is poured into the molds on cars and transferred to the stripper building to be deposited in the pit furnaces. The open hearth building has a span of 65 feet with a lean-to 37 feet wide, and is 832 feet long.

The gas for the open hearth furnaces will be obtained partly from producers of the latest improved type and partly from the carte average.

partially from the coke ovens. A 1,000,000 cubic foot triple lift gas holder is located as shown on the plans adjacent to the furnaces, and is so constructed as to give a working pressure of 5-inch column of water.

#### The Blooming Mill.

The blooming mill, shown in Fig. 6, has a 35-inch train, which was built by the Mackintosh-Hemphill Company of Pittsburgh. It is direct driven by a pair of 50 x 60 inch reversing engines of their latest design. The mill is commanded by two 20-ton electric overhead traveling cranes, built by the Brown Hoisting & Conveying Machine Company, to be used also for charging or drawing ingots from pit furnaces. The mill and pit furnace building is 81 feet 10¼ inches wide, 480 feet long, and contains 16 pit furnaces of the latest type, also the necessary approach tables, main tables, hydraulic and steam shears.

The blooming mill boiler house is 46 feet span, 296 feet long, and contains 3000 horse-power of Babcock & Wilcox boilers, all located as shown on the plan. tion of the boiler house contains three hydraulic pressure pumps, which are 18 and 32 x 8 x 36 feet, of the compound duplex type, furnished by the Northey Mfg. Company of Toronto. The hydraulic system will be of the return type and designed for a working pressure of 500

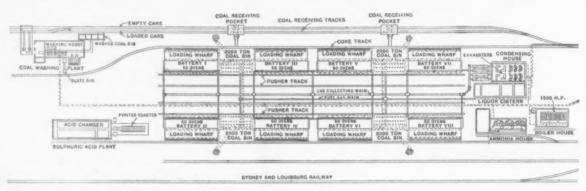


Fig 7 .- The Otto-Hoffman Coke Oven Plant

## THE DOMINION IRON & STEEL COMPANY.

A valve is placed on the fresh water line for connection to the main salt water well and to the salt water discharge line from the pumps, enabling the use of fresh water in case of emergency for cooling pur-poses. To the Northey condensers in the pump house there is a connection leading through the wall to a line

#### Electric Power Station.

This part of the equipment consists of three 500-kw. This part of the equipment consists of three 500-kw. clectric generators built by the Canadian General Electric Company, and each driven by a cross compound condensing engine with cylinders 20 x 40 inches in diameter, 42 inches stroke, running at a speed of 90 revolutions. They were built by Laurie & Co. of Montreal. The building, which has 51 feet 3 inches span by 130 feet long, is of steel with brick wall filling. The structural work was furnished by the Dominion Bridge Company of Montreal. The electric machinery is commanded by a 15-ton crane, also designed and built by the Dominion Bridge Company. The switchboards, booster and ion Bridge Company. The switchboards, booster and electric appliances are all of the latest type, and the entire equipment of the electric power station was furnished by Canadian manufacturers

The metal from the furnaces will be taken in 25-ton ladle cars to a motor driven pig casting machine, which was built by the Heyl-Patterson Company, Pittsburgh, and which has a capacity of 1600 tons per 24 hours, or hot metal may be taken direct to the open hearth furnaces.

#### The Steel Plant.

The plant consists of ten 50-ton open hearth steel furnaces. They are of the tilting type, and the Bertrand Thiel process may be used. These are arranged in a continuous row, and metal may be put into the furnace from either side, or cold pig or stock may be placed in the furnaces by two Wellman-Seaver charging machines. The general lay out is shown in Fig. 5.

pounds to the square inch, with suitable accumulators and operating valves. The boiler feed pumps are compound duplex type, also made by the Northey Mfg. Company, Toronto, being 8 and 14 x 7 x 18 feet stroke. Suitable heaters will be provided. The boiler house building is of steel with brick walls and the same general construction as the other steel work buildings—size 46 feet span by 296 feet long.

In connection with the open hearth plant there will be erected a calcining, grinding and mixing plant of capacity sufficient to furnish all refractory material, linings,

pacity sufficient to furnish all retractory material, inlings, &c. This plant will be equipped with the usual mixers, crushers, elevators, bins and calcining cupolas. The building will be made of steel with brick wall filling.

The stripper building will be made of structural steel covered with corrugated iron. It will be of the usual tower type, 35 x 35 feet in size, and will contain the double cylinder Aiken stripper and double set of car purphers which will be used in pushers, duplicates of the pushers which will be used in the open hearth.

The ladle repair shop will be located at the end of the furnace plant, and will be 35 x 80 feet, a steel building bricked in, and will be provided with crane runways and hand or electric crane of 15 tons capacity. There will be sufficient room for the handling and repairing of six ladles.

It is contemplated to discharge a large quantity of tar on one side of the No. 2 pier. The tar will be brought in tank cars from the coke oven plant to storage tanks shown on the plans, Fig. 4, and pumped into tank steamers.

#### The Coke Oven Plant.

The coke oven plant, which is being erected under contract with the United Coke & Gas Company, is in general a duplicate of the works which were erected for H. M. Whitney, president of the company, at Everett, Mass. The plant, as shown in plan in Fig. 7, consists of two rows of four batteries, each consisting of 50 ovens. of two rows of four batteries, each consisting of 50 ovens

each, or a total of 400 ovens. These are of the Otto-Hoffman by-product type, and the capacity is rated at 1600 tons of coke per day. The plant consists of the necessary mechanism for the charging of coal and the pushing of coke from the ovens to a quenching floor or loading platform. These ovens are of the latest type and embody a number of changes in detail, from which the Dominion Iron & Steel Company receive the benefit of experience of former plants of this type. In addition to eight batteries they are provided with a condenser house 60 x 100 feet, with a cistern adjoining of 40 x 150 feet, and the necessary coolers, sieve washers, &c., for cooling and cleansing the gas. There is also a boiler house containing 1500 horse-power of Babcock & Wilcox water tube boilers, inclosed in a brick building 50 x 100 feet. Adjacent to this is the ammonia house, 40 feet span by 106 feet long, with adequate storing space.

Adjacent to the coke oven plant, as shown on plan, is the coal washing apparatus, which is inclosed in a building 50 x 150 feet, and is provided with the necessary raw coal bins, crushers, and washed coal bins for delivery to the ovens. The machinery and plant are practically of the design made by Stein & Boericke of Primos, Delaware County, Pa., who have successfully washed by the jig system coal of the class which is furnished by the Dominion Coal Company. The capacity of the plant will be 2400 tons per day.

The sulphuric acid plant was designed under the supervision of Chas. A. Bartsch, consulting chemist, of Philadelphia, and has a capacity of 40 tons of acid per day. It is equipped with the latest improved apparatus and is a modification of the old chamber system.

delphia, and has a capacity of 40 tons of acid per day. It is equipped with the latest improved apparatus and is a modification of the old chamber system.

Pyrites will be used in the manufacture of this sulphuric acid, an adequate supply of which will come from the pyrites mines at Newfoundland. The plant is arranged for economical handling, and the sulphuric acid will be transferred from the storage chambers to the ammonia house in a tank car.

The machine shop, foundry blacksmith shop pattern

The machine shop, foundry, blacksmith shop, pattern and carpenter shops are located as shown on plan, Fig. 6. The machine shop is 52 feet span with a 20-foot leanto on each side and 256 feet long, with a fire wall at the end. There is a cleaning room, of same cross section as the main building, between the machine shop and foundry. The shops are equipped with large and small lathes, planers and improved working tools for the handling of all mill and furnace work. At one end of the machine shop is located a locomotive pit, shown on the plan. The machine shop erecting floor is commanded by a 25-ton electric overhead traveling crane built by the Niles Tool Works. The foundry is the same cross section, 192 feet long, and contains two cupolas of capacity about 20 tons per hour. A three-pit brass foundry and the necessary blowers, hoists and equipment for mill and foundry are provided for serving the floor. There are two electric overhead traveling cranes; one, 25-ton, was built by the Niles Tool Works, and one of the same capacity with auxiliary hoist was built by the Dominion Bridge Company, Montreal. The boiler room contains an air compressor for furnishing power to the chipping and hoisting tools, and two boilers, 125 horse-power each. These are the Babcock & Wilcox water tube type. The electric station furnished power for lighting purposes during erection work and for the electric cranes through the works during construction. The blacksmith shop is equipped with bolt header, steam hammer and ordinary tools. The building covering this part of the outfit is of 52 feet 4 inches span and 192 feet long. The pattern shop and carpenter shop are fitted with full set of working tools, and in one corner of the pattern shop is located the tln shop equipment. This building is 52 feet 4 inches span by 192 feet long. A warehouse is located adjacent to the shop location and is 60 feet 8 inches span by 217 feet long.

# Cost of Production.

A good deal of figuring has been indulged in in the Canadian press as to the cost of production at Sydney. Mr. Moxham has put himself on record as saying: "The cost of plg iron after crediting to the same the value of the by-products from the coke ovens should not exceed \$5.50 after everything has been reduced to steady practice. The cost of the steel bloom should not exceed \$11.25." These certainly are figures which even the most favored inland localities in the world cannot improve upon, if, indeed, they touch them. There is certainly none located on tidewater which can claim such cost. Naturally the principal outlet for the iron and steel produced will be in other countries than Canada. Sydney is only 2282 miles from Liverpool and 2564 miles from Antwerp. It is 600 miles from Boston. It is 719 miles from Montreal by water as compared with 710 miles from Pittsburgh to that point. It is expected that some of the tonnage will be placed in the Dominion, but the bulk will undoubtedly go to Europe, particularly in the earlier stages of the enterprise, when pig iron and steel

blooms will be the only products. We understand that the company have chartered for a long period seven steamships controlled by an English and American company. That ultimately the Dominion Iron & Steel Company will aim to market their metal in the finished rather than in the cruder forms is quite evident. There has been some gossip bearing on this point, but we understand that as yet no serious negotiations have been undertaken.

In a few days the first blast furnace of the company will blow in, to be followed soon by the second stack. The other two furnaces and the steel plant are to go into operation next spring and summer.

# The Austrian Iron Combination.

The Vienna correspondent of the London *Economist* reports as follows relative to the collapse of the Austro-Hungarian pool:

The Rimamuranyi Iron Works Company, as the leading firm of the Hungarian participators in the great Austro-Hungarian trust of iron and steel manufacturers, vesterday received an intimation from the Austrian partners to the effect that they had decided to break up the trust, so that it ceases to exist from the day on which the intimation was sent. The action of the Austrian the intimation was sent. partners in the trust is justified by the fact that the Rimamuranyi Company purchased the works of the Hernadthal "and Union" Companies on their own ac-Hernadthal "and Union" Companies on their own account, although the conditions of the trust were that all arrangements with works outside the trust were to be made by common accord, so that a breach of the trust has taken place. The Austro-Hungarian Iron and Steel Trust was founded in May, 1886, and was to last only 20 months. Its chief aim was to let all works forming part of it have a fair share in the total production, which was at that time between 5,000,000 and 6,000,000 metrical hundredweight a year for Austria and 1,500,000 hunhundredweight a year for Austria, and 1,500,000 hundredweight for Hungary. It had been agreed that the Austrian works might deliver 135,000 metrical hundred-weight to Hungary every year, the Hungarian works a like quantity to Austria, in each instance at the prices fixed by the trust. In 1888 the arrangement was re-newed for three years, then for five more years, and the arrangement prolonged the trust until January 1902. Negotiations for the renewal took place during the last half year of each of the arrangements, and they generally caused conflicts, as both Austrians and Hungarians were anxious to change the existing conditions in their favor. It was agreed that a breach of the conditions should at once break up the trust. But the Hungarian partners in the trust do not admit that there has been a breach, and declare that the Austrian partners broke up the trust because the Rimamuranyi, after ners broke up the trust because the klimamuranyl, after purchasing the other works, thought itself justified in demanding a larger share of the iron and steel to be sold to Austria, which the Austrians are not disposed to grant. As matters stand at present the Hungarian works might demand that a court of arbitration should be appointed, but as this would protract affairs, the Hungarians will refrain from doing so. The probable consequence of the breaking up of the trust is that Hungarian works will reduce their prices as much as they can, and that keen competition will follow. Some big firms of dealers have already countermanded orders, as they feel convinced that they will now obtain goods at much lower prices. For Hungary the breaking up of the trust is not a loss, as its production has considerably increased since 1886, and it could not much longer have consented to the conditions of 15 years ago.

The Eastern Shipbuilding Company have begun operations and are preparing to build for the Great Northern Steamship Company two steel steamships, which will be about 628 feet long, have 73 feet beam, and cost about \$5.000,000. The plant is located at Groton, Conn. upon the Thames River, opposite the city of New London, upon land leased in April last from the New York, New Haven & Hartford Railroad Company. Charles R. Hanscom, formerly general superintendent of the Bath, Maine, Iron Works, is president and general manager; John Sherman Hoyt of 47 Cedar street, New York, is treasurer. The company were incorporated last March under the laws of New Jersey, with \$500,000 authorized capital stock, all of one class and all subscribed, but only part issued. There are no bonds outstanding.

The Link-Belt Engineering Company of Nicetown, Philadelphia, have opened an office in Pittsburgh, Pa., for the transaction of business in that vicinity. T. Frank Webster, link belt engineer, is in charge, with offices at 1501-1502 Park Building.

# British Production of Pig Iron and Steel.

The British Iron Trade Association has published statistics of the make of pig iron in the United Kingdom for the first half of 1900, which show a total of 3,973,403 tons for England and Wales, and of 567,000 for Scotland, making a grand total for the six months of 4,540,403 tons, or at the rate of 9,080,806 tons a year. The following are the figures for the different districts:

Make of Pia Iron in Different Districts

| Michie of 1 by 11 on the 1                                                                                      | Sell Ci Cies Trades screet                                                                        | i.                                                                                                     |
|-----------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|
| District. Scotland Durham Cleveland West Cumberland Lancashire South Wales. South Staffordshire                 | Tirst half 1899. Fin<br>Tons.<br>620,000<br>1,645,360<br>448,516<br>371,457<br>467,960<br>215,140 | rst half 1900.<br>Tons.<br>567,000<br>490,088<br>1,054,682<br>451,759<br>365,031<br>448,593<br>201,020 |
| Derbyshire Northamptonshire Lincolnshire Notts and Leicestershire North Staffordshire West Yorkshire Shropshire | 210,247<br>119,482<br>177,961<br>145,609<br>143,167<br>151,238<br>26,015                          | 177,706<br>126,874<br>156,987<br>132,393<br>168,652<br>140,613<br>19,846                               |
| North Wales, &c                                                                                                 | 40,716                                                                                            | 39,159                                                                                                 |

for the first half of 1899. The largest output during the first half of 1900 has taken place in Scotland, where the total make was 502,911 tons, but the output on the Northeast Coast was 498,341 tons, which is only about 4900 tons less than the output of Scotland. The comparative returns for the two half years are as under:

Make of Open Hearth Steel in the United Kingdom in First Half of 1899 and 1900.

| First h                         |           | irst half of 1900. |
|---------------------------------|-----------|--------------------|
| District.                       | Tons.     | Tons.              |
| Northeast Coast                 | 545,115   | 498.341            |
| Scotland                        | 517,107   | 502,911            |
| Wales, North and South          | 195,279   | 331,272            |
| Sheffield and Leeds             | 127,912   | 123.717            |
| Lancashire and Cumberland       | 83,381    | 84.763             |
| Staffordshire. Lincolnshire, &c | 112,525   | 83,819             |
| Totals                          | 1 581 319 | 1 624 823          |

Of the total product of the first half of 1899 1,443.398 tons was acid steel, while that of basic was 137,921 tons. During the first half of 1900 the production of acid open hearth steel had increased to 1,513,957 tons, while the basic make had declined to 110,866 tons.

basic make had declined to 110,866 tons.

The returns collected by the association show that for the first half of 1900 the total make of open hearth steel in the United Kingdom amounted to 698,046 tons of plates and angles, 213,570 tons of blooms and billets, and 284,869 tons of bars, &c. These are the chief finished products of the open hearth steel works of Great Britain, and the totals of all three descriptions make up 1196,485 tons of finished steel out of a total of 1624. 1,196,485 tons of finished steel out of a total of 1,624,-823 tons of ingots. The balance is made up of castings, forgings, tires, axles and other descriptions.

The statistics furnished by manufacturers to the British Iron Trade Association show that the total output of Bessemer steel ingots for the first half of 1900 amounted to 1,038,279 tons, compared with 1,005,922 tons for the first half of 1899. The largest output was 267,-180 tons, produced in South Wales, and the next largest make was 216,034 tons, produced in West Cumberland. The details are annexed:

Make of Bessemer Steel Ingots in the United Kingdom.

| South Wales | Tons. 274,572 174,534 191,196 174,355 113,842 | First half of 1900.<br>Tons.<br>267,180<br>181,925<br>205,232<br>216,034<br>89,740 |
|-------------|-----------------------------------------------|------------------------------------------------------------------------------------|
| Scotiand    | 77,423                                        | 78,168                                                                             |
| Totals      | 1,005,922                                     | 1.038,279                                                                          |

The total make of acid Bessemer steel ingots for the first half of 1900 was 859,686 tons, and of basic ingots the make was 278,593 tons, against 748,919 tons of acid and 257,003 tons of basic steel for the first half of 1899.

The next table gives details of the output of Bessemer steel rails for the first half of 1900, compared with the first half of 1899:

er Steel Rails in the United Kinade

| Muse of Dessemer Steel Russs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | in the United Linguons,                                                                                                               |    |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|----|
| the same of the sa | lif of 1899. First half of 1900<br>Tons. Tons.<br>89,486 79,413<br>74,616 71,008<br>71,200 74,504<br>110,000 113,406<br>71,771 42,818 | D. |
| Totals                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 417,073 381,149                                                                                                                       |    |

The total make of rails for the first half of 1900 is only

36 per cent. of the total make of ingots, and compares with 417,073 tons for the first half of 1899.

The total British production of steel, apart from crucible, in the first half of the current year, has been as under:

| Open hearth | Tons.<br>1,624,823<br>1,038,279 |
|-------------|---------------------------------|
| (Poto)      | 9 669 100                       |

This is at the rate of 5,326,264 tons a year, and is a larger output than has ever before been reached in any former period of six months.

# British Rail Makers and American Competition.

A meeting of the steel rail manufacturers about which a great deal of secrecy has been observed was held in London on Thursday and was largely attended by representatives of the various works concerned. For a long time the price of heavy rails has stood at from a long time the price of heavy rails has stood at from £7 to £7 5s. per ton, the figure agreed upon by the makers, but it has become apparent of late that in face of the growing and serious competition which is being met with daily from the United States some alteration would have to be made or the rail orders would entirely go past this country. Hence the meeting on Thursday to review the situation and to arrainge a concerted plan of action. We understand that it has been decided to allow what is practically a free hand to each maker and low what is practically a free hand to each maker, and that in consequence of this orders will be considered strictly upon their merits. The fixed price, in fact, has been abolished, and the market, so long a closed one, has been thrown open to competition. We understand that an immediate drop in the price of heavy sections to £6 los. came into effect at certain works as soon as the processing was a soon as the section works as soon as the section works as soon as the section was a soon as the section. meeting was over, and it appears likely that this price would be accepted for any orders of an ordinary nature. It, in fact, was quoted on Thursday for an average lot of heavy rails. On the other hand, the deliberations had a further result in that an arrangement was arrived at the the meeting that in the event of large reasons. the meeting that in the event of large orders being put forward the matter of a quotation should be settled at a meeting of the associated members, at which a spe-cial price will be fixed. People in an excellent position to know how matters stand assert that for specially large lots there is no doubt but that makers would take £6. The action of the association has aroused a great deal of curiosity, and the decisions arrived at are heralded, so far as can be gleaned up to the time of going to press, with every appearance of satisfaction.—The Ironmonger.

The Sharon & Butler Railroad Company, who were The Sharon & Butler Railroad Company, who were granted a charter recently to build a road from Sharon to Butler County, are another of the many enterprises of the Sharon Steel Company, who are expending large sums of money in Sharon in new mills. The incorporators are George W. Darr of Pittsburgh, who has been elected president of the road; J. H. Moore and Senator William Flinn of Pittsburgh; F. H. Buhl, John Stevenson, Jr., and James P. Whitla of Sharon, directors. The proposed line will be 30 miles long and will run from the steel plant of the Sharon Steel Company through Mercer steel plant of the Sharon Steel Company through Mercer steel plant of the Sharon Steel Company through Mercer and Lawrence counties to Butler County. The railroad will be used exclusively for hauling coal and limestone from the Sharon Coal & Limestone Company's property to the Sharon Steel Company Works, South Sharon, Pa. The cost will be between \$500,000 and \$600,000, including locomotives and rolling stock. The Sharon Steel Company have leased over 3000 acres of coal and limestone property near Volant and Leashurg, and have located a pany have leased over 3000 acres of coal and limestone property near Volant and Leesburg, and have located a 4-foot vein of fine coal. It is said that enough coal could be mined in this district to supply every industrial concern in the Shenango Valley for the next century, and then not exhaust the supply. Work on the new road will be started soon, and a force of 400 men will commence grading at once grading at once.

The Champion Rivet Company of Cleveland, Ohio, have completed a shipment of 75 tons of Victor rivets for the cruiser "Demoines." The Champion Rivet Company also have the contract for all the boiler rivets for the boilers for the 23 new vessels now being built by the American Shipbuilding Company. These rivets are to be used in large Scotch marine boilers, carrying from 200 to 250 pounds pressure. The largest diameter rivet is 1% inches and the contract calls for about 200 tons of rivets.

It is reported that a large plant for the manufacture of steel freight cars is to be located somewhere along the Monongahela River in the Pittsburgh district. The report, however, has not been confirmed.

# The Iron Age

New York, Thursday, November 8, 1900.

DAVID WILLIAMS COMPANY, - - - - - PUBLISHERS.

CHARLES KIRCHHOFF, - - - - - - EDITOR.

GEO. W. COPE, - - - - - - - ASSOCIATE EDITOR, CHICAGO

RICHARD R. WILLIAMS, - - - - - - HARDWARE EDITOR.

JOHN S. KING, - - - - - - - BUSINESS MARAGER.

# Favorable Trade Conditions in Home Markets.

Seldom have general conditions been more favorable for a large volume of business. To this state of affairs a number of special influences have contributed. These influences have all co-operated in reducing the supply of iron and steel, while some of them have also temporarily checked the demand, thus working both ways. The time is now at hand when the demand will no longer be restrained, but buyers will permit themselves to cover their requirements and capitalists will make long contemplated investments involving the consumption of iron and steel. Prominent among the influences that have checked trade were the very high prices prevailing at the opening of this year. These high prices caused many improvements or new enterprises to be postponed for cheaper times. The building trade suffered not only in the cities but in small towns. Building materials were too dear for both large and small undertakings. The building record of this year will be one of the smallest of the decade, possibly falling below the panic years.

Another great influence in checking business was the overbought condition of all consumers of iron and steel for more than half of this year. They were eager to secure abundant supplies while prices were climbing last fall, and placed contracts for enough to last them for nine months to a year. Until these supplies were exhausted they could not be expected to buy more, particularly as the world's famine in iron and steel had in the meantime been relieved.

Other depressing influences were the wages disagreements during the summer months, which caused numerous manufacturing establishments to be closed, many of them for fully three months and others even longer. Another quite potent factor in checking business was the Presidential election, which induced considerable caution.

Every one of these disturbing influences has now Some of them have actually cured themselves. Prices, instead of continuing excessively high, have receded, the drop in some instances having been so very great that a reaction is already seen toward a higher level. The contemplated enterprises postponed when prices were very high can no longer be delayed on that ground, and may confidently be expected to gradually take shape. Building material having fallen to normal values, the coming building season will in all probability be unusually active. The long period of waiting for stocks of pig iron and other products in consumers' hands to be exhausted or for their contracts to terminate has given way finally to urgent orders all along the line for prompt shipments. The strikes are about over, those still pending being of a local character and in no case involving many workmen.

With the passing of these deterrent influences, the tide of business has for some time been rising. In certain lines it is running to flood, as in the tin plate trade. During the long stoppage of the mills the stocks of tin plates were run lower than for many years, and the manufacturers are now unable to satisfy the necessities of

the trade. From present appearances it will be a long time until tin plate stocks are put in normal condition. The wire trade is another branch in which great activity prevails. Merchants have for a long time been buying wire nails and wire in small quantities, fearing to carry stocks to any extent, but the consumption steadily increases, and their orders have been growing larger and larger despite the feeling of caution which would make them reduce purchases if they could. The wire manufacturers have done an enormous business the past month, rivaling that of the boom period.

The pig iron situation is ripe for a heavy covering . movement among consumers who have been dallying with the manufacturers since the expiration of their contracts, buying only from hand to mouth. Important furnace interests state that until the last two weeks they have less tonnage entered on their books for future delivery than during the 1896-7 depression, nearly all their current business being for quick shipment. They are not exceptional in this respect, but have plenty of company. A little more confidence injected into consumers will greatly stimulate the buying movement, which seems to have developed the past week or two in the various trade centers. The rail manufacturers are confident that the railroad companies will need large quantities of rails next year, and will not be surprised if the tonnage comes up to that of the best year known. They are also expecting a heavy export trade. Of all great consuming interests, the agricultural implement manufacturers are practically alone in not taking a rosy view of the future, owing to short crops in the Northwest. Even they, however, are making fair preparations for the coming year and may be heavy buyers in the spring.

# Comfortable Workshops.

With the beginning of winter the employer in any line of manufacturing in which the pay roll is a factor of consequence will find it profitable to give serious thought to the problem of making his shops as comfortable as circumstances will permit. Consideration for his employees need not, of necessity, influence his judgment or shape his action in any degree. Whether it should or not is a matter of opinion, but in any case he would do well to avoid anything like ostentatious altruism. The best results will come from a strictly practical consideration of what will promote his own interests and earn the largest profit. A judicious and even liberal expenditure in correcting or modifying conditions which render even willing workmen incapable of rendering good service will usually be found a substantial economy. In dealing with well paid labor minutes count and a very small variation in the average productiveness of a day's work will often make all the difference between profit and loss. It is a mistake to suppose that the success of a manufacturing business depends wholly upon what is done in the office. The best laid plans of the management often miscarry for no better reason than that the machinery of production fails to respond to the demands upon it, and costs are increased by causes not foreseen or provided for.

Few workshops are comfortably heated in cold weather. Most of them are much too cold to permit a man clothed suitably for his employment to keep his physical energies toned up to the demands of a full day's work. This will be shown very conclusively and at small expense by a brief experiment of putting the clerks and accountants to work in a temperature between 30 and 40 degrees F. The average workman in a cold shop cannot maintain through nine hours the energy.

needed to keep him warm, becoming exhausted long before his day's work is finished. A man whose feet are
benumbed and whose hands are paralyzed by frost becomes dull witted, apathetic and incapable of sustained
effort, for the reason that the sluggish circulation robs
the brain of the blood which it needs to sustain its action. He approaches the end of his day's work sleepy,
ill natured and physically exhausted, his nerves relaxed
and his muscles flabby. To restore his normal tone needs
more than a night's rest. The through and through chill
of the day's exposure makes him long to stimulate his
low pulses by any means at hand, and alcohol is the
readiest expedient available. A man who feels that "the
genial current of his soul is froze" is not always discreet
in the selection of the means of thawing it.

When it can be done a workshop should be kept as near an average temperature of 60 degrees as possible. The fuel cost of doing this is usually much less than the resulting advantages are worth, if the arrangements are designed and executed under the direction of an expert. Amateur work in shop heating is usually expensive and unsatisfactory. In many important industries shop heating is impossible. This is true of most metallurgical plants, where the nature of the operations carried on involves abrupt transitions from out of door temperatures to blistering local heats. It should be remembered, however, that such transitions are extremely trying to the physical system, and, being inevitable, they suggest the advantage of making such provision as is possible for the comfort of those who remain at the works through the noon hour. They should at least have a warm, well ventilated and comfortable place in which to pass this interlude, with restful chairs and steam pipes so disposed that those who want to warm their feet can do so. The man who has no other place to eat his dinner than a drafty corner of the mill and nothing better to sit on than an ingot mold or a sand pile does not return to his work" when the whistle blows rested or refreshed, and his value for the remainder of the day is a steadily diminishing fraction of his normal capacity.

In some large works the interesting experiment of running a restaurant for the men is now being tried, with every promise of good results. The daily bill of fare is simple, consisting of coffee, hot soups, meat stews and baked puddings. The charges per portion, which are adjusted to cover cost, range from 1 cent for coffee to 5 cents for the meat dishes. In one instance the charge is a trifle higher, but any profit remaining after the expenses of the restaurant are met is turned quarterly into the sick benefit fund. The hot lunch plan is one which commends itself to approval where the conditions permit. Many of the men who formerly went home or to nearby saloons and restaurants now remain at the works and find it both agreeable and economical. They get better and more nourishing food at less cost than before. In cold weather a comfortable and leisurely midday meal, hot and gustatory, quickens the sluggish pulses and puts a man in condition for the afternoon. If run on a plan at all suggestive of charity soup house the self respecting wage earner would resent it, and he would not be content to be fed at his employer's cost. A shop restaurant should be expected to pay its expenses and ought to be discontinued if it fails to do so. The profit to the employer should be in the increased efficiency of those benefited.

The winter output of a shop of any kind depends a great deal upon how it is lighted. During the short and dark days from November to April a great deal of time is lost by reason of the fact that the men cannot half see what they are doing. Artificial light is steadily cheapen-

ing: but, whatever its cost, it is cheaper to have it than to do without it, if work is to be done. The economizing of light is as great a business mistake as its waste. How to light a shop so as to secure the best results from a given expenditure is a problem for the expert, but it is usually left to millwrights and superintendents who know little about it.

In the matter of toilet facilities conditions vary so widely that it is difficult to generalize. Much depends upon the class of labor employed, the number of men to be accommodated, the nature of the work performed and other conditions. Good sanitation pays under all circumstances. Generally speaking, it is a wise business policy to give the men as good toilet facilities as they will use properly. When different classes of men, hav-Ing widely different tastes and habits, are brought together in a great industrial organization distinctions exist which should be recognized. We know of one interesting experiment in this line which may be suggestive to employers. The establishment in which it was tried is a large one employing several classes of labor. It was long ago obvious that nobody was suited by a system which brought all classes together in common wash rooms. The officers of the company thought the matter over and decided that what was good enough for the rougher element, who in other shops had been used to a bucket of water, a cake of yellow soap and a bunch of misappropriated waste for a towel, was insufficient and unsuitable for the better class of mechanics and engineer apprentices, many of whom had the social standing of gentlemen. The result was the erection of a detached frame building, simply but sufficiently fitted up with the facilities for a toilet, including clothes closets, wash basins and shower baths. To twelve men, representing the element who instinctively shunned the sinks in the rush of closing, the proposition was made that if they would form a club of 100 of their own choosing, to be governed by their own rules, they could have the use of the building at the pleasure of the company. The conditions were that they should pay for light by meter measurement and for heat and hot water what the fuel cost. They must also employ a competent and faithful porter, who would keep the place clean and orderly, and provide whatever they used in the way of soap, sponges, towels, &c. The club was formed, with dues of 20 cents per week, each member inclosing the money in a pay envelope bearing his name and date and dropping it in a box on pay day. This gave an average income of about \$19 per week, the club not being always full. It has met all expenses and left a small surplus, which is from time to time reduced by the remission of dues. The plan works admirably. Membership in what is known in this works as "the Dudes' Club" is something of a distinction. Its influence has been felt throughout the works. We can very well understand that there are many establishments in which this plan or any modification of it would be impracticable; but it is needed in many places where it has not yet been tried. To recognize differences in tastes and habits and encourage whatever makes for the upbuilding of self respect and commands the respect of others works like the university settlement in the slums, by establishing a sphere of influence which is elevating and improving.

The Hammond Mfg. Company, Limited, of Hammond. La., have been incorporated with a capital stock of \$10,000, with privilege of increasing to \$50,000, to manufacture Galvanized Roofing and Siding, Steel Cellings and a general line of Galvanized Sheet Metal and Tinware products. The officers of the company are G. E. Dunn. president; J. W. Sentell, vice-president and treasurer, and T. G. Davidson, secretary and general manager.

# An Increase of the Navy.

Washington, D. C., November 6, 1900.—Secretary Long, who will return to Washington in a few days to prepare his report to Congress, has now upon his desk outlines of three plans looking to the further increase of the navy, which he will carefully review before sketching that feature of the President's message to Congress which is usually roughly drafted in the Navy Department. The first of these plans has been prepared by the Construction Board of the Department, which is composed of the various bureau chiefs, this plan provid-ing for no less than 32 new ships. The second scheme of enlargement is the work of the so-called Policy Board, headed by Admiral Dewey, and embraces a dozen or 15 new vessels, mostly cruisers. The third plan is sup-plemental to that of the bureau chiefs, and has been volved by Admiral Hichborn, the chief constructor, and provides for a number of vessels specially designed for certain important functions in connection with naval operations at a considerable distance from the coasts of United States.

While Secretary Long has been very reticent concerning his probable recommendations to Congress way of increasing the navy, he has not hesitated to say that he would not ask for as many additional vessels as the Department recommended a year ago, and hence there is much interest felt in naval circles as to how the Secretary will apply the pruning knife to the plans now before him. The understanding is current that with the exception of certain auxiliary vessels projected by Admiral Hichborn, but approved by the Construction Board, the Secretary will ask Congress to appropriate at the coming session for nothing larger than a gun boat. This will be very disappointing to the bureau chiefs, as well as to the line and staff, but Secretary Long is very much in earnest in his effort to reduce expenditures on account of the navy to a peace footing as soon as pos-sible, and he does not intend that retrenchments made by the Department shall be offset by an unnecessarily large construction account.

The plans of the Construction Board embrace 6 cruisers, 20 gun boats, several armed colliers and a floating machine shop similar to the "Vulcan." It is proposed that the cruisers shall have a higher rate of speed than any heretofore designed, and the suggestion has been made that several of them shall be equipped as "torpedo cruisers," an entirely new type of war vessel, having a displacement of at least 4000 tons and carrying primary batteries of 8-inch guns in addition to a full equipment of torpedoes, including the automobile pattern. Such vessels, capable of outsteaming any vessels of equal ton-nage in the world, and able to throw a very heavy weight of metal if compelled to fight, would, it is urged, prove very formidable craft, and would be available either for harbor defense or for operations in connection with large fleets on foreign stations.

As Secretary Long has intimated that he will indorse the recommendations for a number of gun boats, considerable interest is felt in their design and equipment. will range in size from 1800 to 3500 tons. and will combine two important characteristics, the lightest poscombine two important characteristics, the lightest possible draft with the heaviest rapid fire batteries that can be provided without detriment to their sea going qualities. They will also be provided with unusually large bunker capacity, the Construction Board now keeping constantly in view the importance of designing ships capable of making the trip from the Pacific Coast to the Philippines without coaling an route. to the Philippines without coaling en route.

# Coaling Vessels.

The problem of coaling fleets on foreign stations is becoming a more important one, as experience demonstrates the poor quality of the fuel to be had in the Orient. Naval commanders use Japanese coal only when Orient. Naval commanders use Japanese coal only when obliged to do so, and the coal to be found in the Philippines is said to contain so much sulphur as to be most undesirable for use on any sea going vessel. Considerable attention has already been drawn to the fact that the army transports, which are under the exclusive jurisdiction of the War Department, have been seriously damaged as a result of the use of Oriental coal under forced draft, and naval experts predict that the army will be obliged ultimately to secure all its coal from other sources. In order to meet this condition of affairs it is expected that the Navy Department will soon provide for the construction of four or five armed colliers capable for the construction of four or five armed colliers capable of carrying 10,000 tons of coal from the Atlantic Coast to the Philippines at a fair rate of speed. Three colliers have been decided upon, and will be armed to take care themselves in an encounter with anything less formidable than a first-class cruiser or battle ship.

# A Repair Ship.

The Construction Board has agreed to recommend a 6000-ton repair ship on the lines suggested by Admiral

Hichborn in his annual report recently printed in The Iron Age. It is not believed that it is practicable to use any vessel now in the navy, or that can be purchased, for this work, owing to fundamental structural defects. An unusually high between dacks is required to provide for the installation of all necessary tools and for power transmission, proper lighting and adequate ventilation. Admiral Hichborn is of the opinion that such a vessel, kept constantly in commission, would pay for itself in a very short time in the difference between the cost of repairs made on board her as compared with the charges of private shipyards, leaving out of account the difference in the character of the material and workmanship. It is believed that Secretary Long will include the floating machine shop and several armed colliers in his recommendations, though it is probable that the torpedo cruisers and other vessels larger than gun boats will be eliminated.

# American Competition in South Africa.

LONDON, October 26, 1900.—There is no end of a pother over here on account of orders coming from South Africa American manufacturers for railway engines, trucks I mining machinery. The air is thick with assertions and mining machinery. The air is thick with assertions and denials; the Colonial Office is bombarded with furious protests, and an evening paper quotes The Iron Age as having special information on the subject. Denials notwithstanding, English engineers know quite well that orders are going to America because there is prompter delivery and American prices are cheaper than English. For example, the Witwatersrand gold mines, requiring rolling stock for the carriage of coal, placed an order for 15 heavy locomotives with British manufacturers last August. Two tenders for over 200 trucks were also received from the largest British and American factories, the tenders from America being preferable as regards-price and quickness of delivery. But South Africa is, at the present time, suffused with an unusual quantity imperialism, and accordingly the mining magnates called for fresh tenders from the British manufacturers so that they might level down their prices. But the tenders still remained considerably lower. In spite of this, orders for 73 flat bottomed trucks went to England on the strong advice of the British military railway thorities, but orders for 160 bottom discharge trucks have been placed with America. It is necessary to bear in mind the distinction between the Government authorities and private buyers. The Agent General in London for the Cape Colony writes that the expenditure on railway material in England for the period January 1, 1897, to September 30, 1900, amounted to nearly \$20,000,000. Orders are at the present moment outstanding amounting to \$2,500,000. During the same period orders sent by the authorities to the United States have amounted to The Agent General remarks that most of this amount has been on account of subcontracts and that the colony has always given a preference to the British man-ufacturer. The Agent General adds: "The Cape Colony send their orders direct to America through an agency in New York whenever the necessity demands it, and this necessity is urged by the desire for dispatch and economy, and not in consequence of alleged anti-British tendencies of the Cape officials." This diplomatic denial notwithstanding, there can be no doubt that America is undertaking large contracts in South Africa. In March, 1899, six improved Pullman cars were supplied to the Cape Government rallways. In July, 1900, several Baldwin locomotives were delivered at Cape Town in part completion of Cape Government contracts, and there are still several engines ordered in America as yet undelivered. Dietect of Co. of Philadelphia have supplied. delivered. Dickson & Co. of Philadelphia have supplied four engines, and at the present moment the Union Switch & Signal Company of Pittsburgh have in hand orders from the Cape Government railways, while several side tank engines from the Baldwin Works are just about to be delivered at Cape Town. The Pressed Steel Car Company, Pittsburgh, have an order from the Cape-Government of several steel platform cars of 40 tons capacity. It is perhaps unnecessary to discuss the matter further. There cannot be the slightest doubt that until British manufacturers standardize their actions. British manufacturers standardize their patterns and pre-pare for their orders beforehand. American makers cannot fail to secure remunerative contracts from South Africa and elsewhere. The ups and downs of the South African war are so kaleidoscopic that it is probable that by the time this dispatch reaches New York there will be some unexpected development, but writing on October 27 there is every appearance that the war will continue some lengthened period, the Boer farmers having decided upon adopting guerrilla methods. This will keep the country in a state of disorder and retard business development. There cannot be any doubt, however, that Colonel Girouard has a warm corner in his heart for American engineers.

# MANUFACTURING.

#### Iron and Steel.

A meeting of the stockholders of the Laughlin Nail Company of Wheeling, W. Va., will be held on Tuesday, November 20, for the purpose of voting upon a proposition that the company shall engage in the manufacture of wire nails on a large scale. There seems to be no doubt that this concern will install a large number of wire nail machines.

The Altoona Iron Company, Altoona, Pa., manufacturers of refined bar iron, advise us that some of their puddlers have refused to accept the reduction in the puddling rate from \$4.25 to \$3 a ton, and have been paid off. This concern for more than 25 years have had an agreement with their men to pay Eastern prices for puddling, and in making the reduction from \$4.25 to \$3 they were simply carrying out this agreement. The finishing mills are all running and will continue to do so. The firm have considerable muck bar on hand, and will purchase more if necessary. This concern will likely put up some new buildings in the near future to replace some present ones which are very old and virtually worn out.

The National Steel Company will make some more enlargements and improvements to the Ohio Works at Youngstown, Ohio. Two new steel buildings will be erected and one of the present buildings will be extended. The Fort Pitt Bridge Company of Canonsburg, Pa., have the contract for this work. The George B. Sennett Company, Youngstown, will furnish table and shears, the Century Machine & Mfg. Company, Mansfield. Ohio, screw bed and hot bed plates, while the Lloyd Booth Company of Youngstown will furnish a lot of special machinery for the billet conveyors in the steel plant.

The Bradford Steel Company will erect a small plant at Bradford, Pa. The buildings have been placed with the Fort Pitt Bridge Company of Canonsburg, Pa.

The Eagle Works of the Republic Iron & Steel Company at Ironton, Ohio, which have been idle for some time, have been put in operation in all departments.

The Northwestern Iron Company's blast furnace at Mayville, Wis., resumed operations on October 30.

R. G. Caldwell has been appointed trustee in bankruptcy for the Kentucky Furnace Company, Paducah, Ky.

The Brown-Bonnell Works and the Valley Works of the Republic Iron & Steel Company at Youngstown, Ohio, are now running to full capacity. As yet the Haselton Works at Haselton have not been started up, and may remain idle for some time.

A coupling and socket department is to be added to the Youngstown Works of the National Tube Company at Youngstown, Ohio. Heretofore couplings have been made at the other works of the National Tube Company and then shipped to Youngstown, but in the future it is intended to make all couplings needed for the Youngstown Works at that plant. The new department will be contained in a building to be erected southeast of the present plant and to measure 40 x 230 feet, having a floor capacity of over 10,000 feet. There will be a small building, 16 x 60 feet, to contain a Duff's gas producer; new forges, hammers, shears, tipping machines and two Seaman gas furnaces will also be installed in the Youngstown Works. Every department of this plant is now in full operation and is in charge of W. L. Kaufman, manager.

The Buffalo Union Furnace Company of Buffalo, N. Y., with a capital of \$1,200,000, have been incorporated. The company will manufacture pig Iron from iron ores and products of pig Iron into iron and steel of various forms. The Buffalo Union Furnace Company are a consolidation of three furnace properties consisting of the Buffalo Furnace Company, the Union Iron Works and the Buffalo Charcoal Iron Company. The directors are as follows: Frank S. Baird, Henry J. Pierce, Herbert P. Bissell, George C. Riley, J. Henry Metcalf, Samuel H. Baird and William J. Jameson, all of Buffalo. Frank S. Baird will be general manager.

The contract has been let for the foundations of the four new blast furnaces of the Lackawanna Iron & Steel Company at Buffalo, N. Y.

The Antrim Furnace of the Antrim Iron Company, Mancelona, Mich., was blown out October 20. It is to be blown in during December.

The Lawrence Furnace at Ironton, Ohio, belonging to the John Peters Iron Company, is to be blown in during the present month.

Furnace A of the Maryland Steel Company, Sparrow's Point, Md., was blown out October 20, for relining.

The Kittanning Iron & Steel Company, Kittanning, Pa., blew out their Rebecca Furnace October 13.

 $\boldsymbol{A}$  new lining is being put in the Chatham Furnace, Connecticut.

The Cherry Valley Furnace of the Cherry Valley Iron Works, Leetonia, Ohio, went out of blast on October 19 for a new lining.

The Cranberry Iron & Coal Company, Cranberry, N. C., blew out their furnace on October 8.

The Anna Furnace of the Struthers Furnace Company, Cleve land, Ohio, has been blown out.

C. R. Baird & Co., Philadelphia, Pa., have banked the Chickies Furnace and the Emporium Furnace in Pennsylvania, and the Roanoke Furnace in Virginia.

The National Steel Company have blown out their Zanesville Furnace and their Sharon Furnace.

The Saxton Iron Company, Saxton, Pa., have been reorganized, under the name of the Saxton Furnace Company. All the property of the former concern, together with the properties of the Dry Hollow Ore Company, have been absorbed by the new company. Charles H. Scott has been elected president and E. W. Porter secretary and treasurer, with offices in the Manhattan Building, Philadelphia, Pa. It is expected that the furnace will be in blast by December 1. L. & R. Wister & Co. will be the Philadelphia sales agents for the pig iron.

The Seaboard Steel Casting Company of Chester, Pa., Hon. William C. Sprone, president, are nearing the finishing point. The furnaces will soon be lighted and there are orders on the books for December and January delivery.

#### Machinery.

The Marinette Iron Works, Marinette, Wis., are making plans for the enlargement of their shops. They manufacture a gas engine of new design, for which they have built up a heavy trade. The plans contemplate more than double the capacity of their present facilities.

The Richer-Clark Mfg. Company will erect a wagon factory and machine shop, at Greentown, Howard County, Ind.

The Hartman Mfg. Company of Pittsburgh have been granted a West Virginia charter with a nominal capital of \$1000. The new concern will make center plates and small castings.

The Aultman Company of Canton, Ohio, have shipped a 40-ton charging device to the Carnegie Steel Company. A rock crusher was recently shipped by the same firm to New Mexico. Their plant is running full, and they have a large number of orders on hand.

The Lloyd Booth Company, Youngstown, Ohio, manufacturers of rolls and rolling mill machinery and tin plate equipment of all kinds, are operating their machine shops night and day. The firm were recently compelled to post notices about their plants for machinists. There is something of a scarcity of skilled labor in Youngstown, and it was some days before the firm could get sufficient men to make full night crews.

The Mahoning Foundry & Machine Company, Youngstown, Ohio, advise us that the report that they would remove their plant from Youngstown to Niles, Ohio, is untrue. The concern state that their business has grown to such an extent that they will soon have to build a much larger plant, as they are very much crowded in their present quarters. They regard indications very good for a steady run of work such as they turn out.

The Youngstown Foundry & Machine Company, Youngstown, Ohlo, manufacturers of rolls and rolling mill castings, are crowded with work and have enough contracts to keep them busy for some months. This concern are now occupying their new machine shops, which were added to the plant last summer, with the exception of a large planer and lathe. All machinery is set up and running.

The Fort Pitt Bridge Company recently installed in their works, at Canonsburg, Pa., a 10-ton three-motor electric traveling crane, made by the Northern Engineering Company, Detroit,

The Browning Engineering Company of Cleveland are erecting a plant in Collinwood, a suburb of that city, and will manufacture hoisting machinery. Twelve acres of land were given to the concern on the condition that they employ 700 men. The officials are B. F. Miller, president; V. R. Brown, vice-president, and E. H. Browning, secretary.

The Waynesburg Forge, Sheet & Tin Mills, whose plant at Waynesburg. Pa., is in course of construction, have placed a contract with the Canton Roll & Machine Company, at Canton, Ohlo, for one 22-inch bar mill and pinion complete for rolling tin plate bars out of billets, and also for a 126-inch sheet shear. The N. & G. Taylor Company, Cumberland, Md., have also a contract with the same concern for a 22-inch cold rolling mill and one 48-inch roll lathe. The Tyler Charcoal Iron & Tin Mills, Washington, Pa., have also given to this concern an order for one 26 x 32 hot mill and one 42-inch doubling shear; from the Champion Iron & Steel Company, Muskegon, Mich., for two 26 x 36 hot mills and two 42-inch doubling shears. Shipments of machinery from the works of the Canton Roll & Machine Company last month were the heaviest in any one month in the history of that concern.

The Gulf Motor Works, New Orleans, La., were commenced in May last for the manufacture of marine and stationary gas and gasoline engines and report that they are making good progress. They are at present developing a multiple cylinder engine for domestic electric light plants.

R. Stienert & Co. are building a foundry and machine shop at Washburn, Wis. The machine shop will be completed first, occupying a ground space, 32 x 62 feet.

We are advised that it required 7000 cubic yards of sand to cover the floor in the new foundry of the Morgan Engineering company, at Alliance, Ohio, which was started last week. The boundry is fitted with three cupolas, and is served by seven dectric overhead traveling cranes. It has been built with special view of good light and ventilation, and fitted with most modern equipment for foundry practice. Natural gas is used as a fuel throughout the plant and with very satisfactory results.

The Hess Machine Company, Philadelphia, Pa., shipped a few days ago to Yokohoma, Japan, a complete plant of file making machinery, having a capacity of 125 to 150 dozen files per day. This consignment was for the Japanese Government.

John Nazel, Philadelphia, Pa., now has associated with him F. C. Hulme, and they are continuing the manufacture of special machinery and machine tools, under the name of the Nazel & Hulme Machine Works. They have recently completed a number of paper box machines for local delivery. These each have a capacity of 1200 to 1500 complete boxes per hour. A number of their special portable drills have also been recently delivered.

The Interstate Foundry Company, Cleveland, Ohio, have recently been incorporated with a capital stock of \$400,000. Buildings are being erected, and the company expect to be ready for business January 1.

Fire occurred at the foundry of the American Play Working Machine Company, at Willoughby, Ohio, on Saturday, October 27. The foundry and contents were entirely destroyed, the loss being estimated at \$13,000, fully covered by insurance. The foundry will be rebuilt at once and equipped with modern appliances. A 60-inch cupola and a 20-ton electric crane will be included in the equipment. Pending the construction of the new foundry the American Play Working Machine Company will make their necessary castings at one of the other foundries which they operate.

Since removing in 1898 to their present enlarged quarters the Toledo Machine & Tool Company of Toledo, Ohio, have added largely to their equipment, and have more than trebled their capacity for producing punch presses and special tools for sheet and bar metal work. During the present year they have given considerable attention to the requirements of shovel manufacturers, and have installed several large plants for this purpose, among others that of the Laughlin Nail Company, at Martin's Ferry, Ohio. The Toledo Machine & Tool Company are now negotiating for the equipment of another plant for shovel manufacturing which will have considerable more capacity than any now in operation in this country.

The Bridgeport Machine & Motor Company have been incorporated with a capital stock of \$25,000. The incorporators are A. B. Barkman, E. T. Brantigam, H. H. Brantigam and B. C. Hendrickson.

Gould & Eberhardt, with principal office at 97 N. J. R. R. avenue, Newark, N. J., have been incorporated with a capital of \$100,000 for the manufacture of tools, machinery, &c. The incorporators are Ulrich Eberhardt, Z. Ulrich Eberhardt, Jr., Frederick L. Eberhardt and Henry E. Eberhardt.

The White Motor & Machine Company of Waltham, Mass., have been incorporated in Delaware, with a capital of \$25,000.

Charles Leffler & Co., Brooklyn, N. Y., have been incorporated for the manufacture of machinery, with a capital of \$50,000. The directors are Charles Leffler, F. E. Gundrum and E. T. Kircher of Brooklyn.

The Acme Mining & Machinery Company of Salt Lake City. Utah, have been incorporated with a capital of \$30,000. The business of the incorporation is to buy, sell, lease and manufacture and deal in machinery. The headquarters of the company will be located at 327 South West Temple street. President, A. W. Stevenson: vice-president, E. P. Sears; secretary and treasurer, A. B. Stephens.

The Soulé Steam Feed Works, Meridian, Miss., who are manufacturers of saw mill specialties, have had a very satisfactory trade this year. They have always almed to keep adding to the number of their specialties. The most recent addition is a steam log loader, the particular feature of which is that it comes in between the very expensive loaders that cost several thousands of dollars and the primitive methods of manual or animal power, its cost being only a few hundred dollars. While the bulk of the trade of the house is confined to the Southern lumber field, they have lately filled two steam feed orders for the Dominion of Canada, four for the State of Michigan and several for the mountain districts of the Pacific Coast.

The Pittsburgh Gage & Supply Company, Pittsburgh, Pa., report a phenomenal demand for the Pittsburgh safety water column, particularly from manufacturing plants in Ohio and Michigan. Among the orders received the past month for this appliance are the following from these great companies, who are equipping their plants complete with the Pittsburgh: The American Sheet Steel Company, 95; the American Steel & Wire Company, 72: the Lake Shore & Michigan Southern Railway, 80; the American Steel Hoop Company, 61; the Crown Fire Clay Company, 24: the Structural Steel & Iron Works, 20; the Ohio Steel Company, 20; Fleischman Company, 12; Erhart & Co., 12; Cincinnati Water Works, 12; the Youngstown Steel Company, 10; Hoover & Allison Company, 10.

The Morgan Engineering Company of Alliance have secured a

contract for what is said to be the largest crane ever exported. It will have a span of 96 feet, the size being so great that it will be necessary to cut the girders in two for shipment. The crane will go to India. The Morgan Company are at work on cranes for Russia, India, Mexico, France and Cuba.

Reeves Brothers, Alliance, O., have commenced work on an addition 76 x 96 feet, to be used as a power house, and have placed contracts for engines, boilers, generators, &c. The entire plant will be changed to electric drive.

The Vincent Valve Company have commenced operations on a new plant at Sandusky, Ohio. E. C. Bacon is general manager of the company.

The Beardsley & Hubbs Company of Mansfield, Ohio, carriage manufacturers, have gone into the manufacture of gasoline automobiles and are equipping a plant with new machinery.

#### Hardware.

The Rogers & Wood Company, Northampton, Mass., have organized under the laws of Massachusetts for the manufacture of reinforced silver plated flatware. The officers are E. E. Wood, president; George F. Rogers, secretary; W. H. Gaines, treasurer and manager. The members of the firm are practical men and well known to the trade. Mr. Gaines was for a number of years connected with Rogers & Hamilton, Waterbury, Conn.

The Ford Bit Company, Holyoke, Mass., manufacturers of the Ford auger bits and ship augers, have moved to larger quarters on Bigelow street, and have added new machinery which will greatly increase their output.

The Snelflohn & Seefeldt Company, manufacturers of hardware specialties, Milwaukee, Wis., have purchased a large tract of land along the Chicago, Milwaukee & St. Paul Railroad, between Twenty-fifth and Twenty-seventh streets, for the purpose of building a large plant to increase their manufacturing facilities.

The Cincinnati Foundry, Screen & Wire Works, J. H. Shrader & Co., proprietors, Cincinnati, Ohio, have purchased the plant located at 1962-1966 Queen City avenue, formerly operated by Dohner Brothers, and are now engaged in making the necessary alterations and additions of new machinery for the production of wire and iron fencing, bank and office railings, elevator cabs and inclosures, flower stands, weather stripping, &c. A catalogue is now in course of preparation, which will be sent to the trade upon request.

The Nicholson File Company, Providence, R. I., advise us that they have recently been receiving stock orders of larger volume, indicating the confidence of the trade and the satisfactory character of business.

Dublin Hame Works, Dublin, Ga., have reorganized, and are now operating under an entirely new management. T. B. Hicks has been elected president of the concern: J. B. Hicks, vice-president, and J. C. Pelmon, treasurer. All kinds of oak, eim and hickory hames are made.

#### Miscellaneous.

The Nut & Washer Mfg. Company, South Bay and Reynolds streets, Milwaukee, Wis., have completed important additions to their plant and are now erecting a brick office building.

The Northern Pacific Railroad Company will build new shops at Brainerd, Minn., the steel work of which will be furnished by the American Bridge Company.

The Structural Iron & Steel Company of Baltimore, Md., have the contract for furnishing the structural steel for the new manual training school at Washington, D. C. The same company have the contract for furnishing the structural material for a new power house at Georgetown, S. C.

A number of improvements are being made to the Youngstown Works of the American Bridge Company at Youngstown, Ohio. Ten cranes of a capacity from Youngstown, Ohio. Ten cranes of a separate to 20 tons each, operated by compressed air, are being installed, and also a new gas engine driving a belted compressed in order to provide the necessary power. This plant compressor, in order to provide the necessary power. has also received several other new machines from the Economy plant of the Berlin Iron Bridge Company, for whom they were originally intended, but which were afterward transferred to the Youngstown plant, and which has about doubled its capacity. It will be recalled that previous to the formation of the Amerian Bridge Company the Berlin Iron Bridge Company at East Berlin, Conn., intended to erect a very large plant at Economy, Pa., on the line of the Pittsburgh, Fort Wayne & Chicago Raiload, about 20 miles from Pittsburgh. When the American Bridge Company was organized, however, this plant was abandoned.

The New Orleans Roofing & Metal Works, New Orleans, La., have just finished a contract for a tropical roofing for the John Rice Mill Company, Beaumont, Texas., and the new Cora Sugar Refinery, Whitecastle, La. They have also done the galvanized iron work and composition roofing on the Sacred Heart Convent and the Jesuits' College building in New Orleans and the roofing of the Hancock County Bank, Bay St. Louis, Miss.

An Ohio reaper and mower manufacturing concern have made a proposition to the city council of Upper Sandusky for the organization of a new company with \$200,000 capital to build reapers and mowers. The company ask \$20,000 bonus, 25 acres of land, and they agree to employ 100 men and to remain 15 years.

Nove

# The Iron and Metal Trades.

As yet it is too early to attempt to gauge the effect of the election upon the Iron trade. Many hold that the result has removed the fear of a serious danger rather than that it has introduced a new element. But, even assigning to it so purely negative a value, it is highly beneficial by giving play to the many and powerful influences which have been making for a long period of activity at fairly remunerative prices for our home markets. So far as the export trade is concerned, we must look forward to a sharp struggle, since advices from Europe show a continued sharp reduction in consumption.

The past week has been an active one, the policy of discounting the election having spread. Heavy sales of Pig Iron are reported from all the leading distributing centers and during the closing days of October fully 30,000 tons of Basic Iron were sold in the Philadelphia district. Chicago reports very large transactions and Cincinnati records the banner week for the whole year.

It is yet, of course, too early to judge to what extent the election has thus been discounted in this branch. It is certain that some options have been granted which ran beyond the election, and these will probably be availed of. The impression in the trade is that a very large amount of tonnage is still uncovered, and quite a number of sellers have withdrawn or are asking an advance. Whether developments will justify the first enthusiasm remains to be seen. The general situation certainly is very sound and promising.

In the finished trades Western reports record heavy purchases of Bars, Sheets, Wire, Tin Plate, Merchant Pipe, &c., and note an advancing tendency. Reserve capacity is being drawn on steadily. In the Plate trade prices have settled down to those established by the association. The tonnage on the books of the mills must be enormous. One large interest gave out orders for 35,000 tons last week.

In the Structural trade some very good business has been coming up. In New York contracts for the material for three buildings are placed which call for close to 8000 tons. The Philadelphia & Reading road has ordered 3000 tons of bridge material, while the Chicago, Rock Island & Pacific has placed 3500 tons.

What promises to become a very important and decisive gathering is that of all the Steel interests this week. It is probable that data will be available to shed light on the many perplexing questions involved in handling the Steel Billet trade. The large interests are reported to be in earnest and are approaching the problem in a conciliatory spirit, so that strong hopes are expressed of a satisfactory outcome. It is stated that some very large consuming interests are approaching the time when important purchases must be made.

In the Rail trade there have been no new developments,

# A Comparison of Prices.

At date, one week, one month and one year previous.

Advances over the Previous Month in Heavy Type,

| Declines in                                                                                           | Italics.                |                         |                         |                         |
|-------------------------------------------------------------------------------------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
|                                                                                                       | Nov. 7. C               |                         |                         | Det. 1<br>1890          |
| PIG IRON:                                                                                             |                         |                         |                         |                         |
| Foundry Pig, No. 2, Standard, Phil<br>adelphia                                                        | \$15.25                 | \$15.00 §               | 15.00                   | 322.77                  |
| Foundry Pig, No. 2, Southern, Cincinnati Foundry Pig, No. 2, Local, Chicago                           | 12.25                   | 12.00<br>14.50          | 13.00<br>14.50          | 20.77                   |
| Bessemer Pig, Pittsburgh<br>Gray Forge, Pittsburgh                                                    | 13.25                   | 13.15<br>12.75          | 13.00<br>12.75          | 21.00                   |
| Lake Superior Charcoal, Chicago                                                                       | 17.60                   | 17,00                   | 18.00                   | 25.(k)                  |
| BILLETS, RAILS, ETC.:                                                                                 |                         |                         |                         |                         |
| Steel Billets, Pittsburgh<br>Steel Billets, Philadelphia                                              | 17.50 20.00             | 18.00<br>20.00          | 16.25<br>19.25<br>19.50 | 38,50<br>40,00          |
| Steel Billets, Chicago                                                                                | 19.50<br>33.00          | 19,50<br>33,00          | 33.00                   | 46.00                   |
| Wire Rods, Pittsburgh<br>Steel Rails, Heavy. Eastern Mill                                             | 26.00                   | 26.00                   | 26.00                   | 33.(0)                  |
| Splice Bars, Tidewater                                                                                | 1.45                    | 1.45                    | 1.40                    | 2.65                    |
| OLD MATERIAL:                                                                                         |                         |                         |                         |                         |
| O. Steel Rails, Chicago O. Steel Rails, Philadelphia O. Iron Rails, Chicago                           | 10.00 $15.00$ $16.00$   | 10.00<br>14.00<br>16.60 | 10.00<br>12.75<br>15.50 | 20,00<br>21,50<br>85,00 |
| O. Iron Rails, Philadelphia O. Car Wheels, Chicago O. Car Wheels, Philadelphia                        | 16.50<br>15.00<br>16.50 | 16.50<br>15.00<br>16.50 | 15.50<br>17.00<br>15.50 | 25.00<br>20.30<br>21.00 |
| Heavy Steel Scrap, Chicago                                                                            | 9.70                    | 9.50                    | 10.00                   | 19.00                   |
| FINISHED IRON AND STEEL:                                                                              |                         |                         |                         |                         |
| Refined Iron Bars, Philadelphia<br>Common Iron Bars, Youngstown<br>Steel Bars, Tidewater              | 1.25<br>1.20<br>1.25    | 1.25<br>1.20<br>1.25    | 1.25<br>1.25<br>1.25    | 2.10<br>2.25<br>2.40    |
| Steel Bars, Pittsburgh                                                                                | $\frac{1.15}{1.38}$     | 1.10<br>1.85<br>1.25    | 1.10<br>1.25<br>1.10    | 2,85<br>3,00<br>2,75    |
| Beams, Tidewater<br>Beams, Pittsburgh                                                                 | 1.65<br>1.50            | $\frac{1.65}{1.50}$     | 1.65<br>1.50            | 2.40                    |
| Angles, Tidewater                                                                                     | 1.55                    | 1.55                    | 1.55                    | 2.40                    |
| Skelp, Grooved Iron, Pittsburgh                                                                       | 1.50                    | 1,45<br>1,50<br>3,05    | 1.40<br>1.45<br>3.05    | 2.10<br>2.40<br>3.15    |
| Sheets, No. 27, Chicago                                                                               | 2.00                    | 2.80                    | 2.80<br>2.80            | 3.10                    |
| Barb Wire, f.o.b. Pittsburgh.<br>Wire Nails, f.o.b. Pittsburgh.<br>Cut Nails, Mill.                   | 2.30<br>1.95            | 2.20<br>1.95            | 2,20<br>1.95            | 2.80<br>2.50            |
| METALS:                                                                                               |                         |                         |                         |                         |
| Copper, New York                                                                                      | 16.75                   | 16.75                   | 16.75<br>8.95           | 18.37 1/4               |
| Spelter, St. Louis<br>Lead, New York                                                                  | 4.873                   | 6 4.8716                | 4.8714                  | 4.60                    |
| Lead, St. Louis<br>Tin, New York                                                                      | 28.00                   | 27.83                   | 28.75                   | 81.90                   |
| Tin, New York<br>Antimony, Hallett, New York<br>Nickel, New York<br>Tin Plate, Domestic Bessemer, 100 | 9,50<br>55.00           | 9.50<br>55.00           | 9,50<br>55.00           | 9.75<br>36.00           |
| Tin Plate, Domestic Bessemer, 100<br>lbs., New York                                                   | 4.19                    | 4.19                    | 4.19                    | 4.824                   |

# Chicago. (By Telegraph.)

Office of The Iron Age, 1205 Fisher Building, CHICAGO, November 7, 1900.

The local market has again been decidedly active. Consumers have taken hold particularly well in Pig Iron, but a great deal of business has also been closed in various lines of finished products. Numerous buyers, among whom are the largest consumers, evidently decided to wait no longer, but to anticipate an expected improvement in prices after the election. Car builders are still important factors in the market, but the agricultural implement makers, wagon builders, engine manufacturers, railroad companies and other great interests are placing orders liberally. Quite a difference of opinion prevails respecting the future. Some are sanguine that prices will be much higher, while others look for an exhibition of strength only for the present, to be followed by a decline. The believers in a stronger market appear to be greatly in the majority.

Pig Iron.—The past week has been one of the largest not the largest, this year in the tonnage of contracts placed. Chicago consuming interests have bought heavily for deliveries running into next July, while large Milwaukee foundrymen and numerous other consumers in this territory have also made heavy purchases. Some buyers have taken as much as 10,000 to 12,000 tons each, others have taken 3000 to 5000 tons. Many deals have been closed up which have been pending for a long time. but many more are still hanging over the market and are liable to be closed within a day or two. Quotations continue about as they have been, but it is difficult at present to determine precisely what rates are running the market. Some of the transactions are known to have been placed at extremely low figures, especially those involving the purchase of Southern Iron. sible that on some grades our quotations have been shaded to the extent of \$1. It is asserted now that these extremely low prices can no longer be secured, as the sellers have booked so much tonnage that they have withdrawn from the market. Some of the Southern furnace companies are quoting \$10.50, Birmingham, as their minimum, while others have a still stronger faith in the future and are standing firmly at \$11.50. Quotations are

| Lake Superior Charcoal                 | \$17.00 to | \$17.50 |  |
|----------------------------------------|------------|---------|--|
| Local Coke Foundry, No. 1              | 15.00 to   |         |  |
| Local Coke Foundry, No. 2              | 14.50 to   | 15.00   |  |
| Local Coke Foundry, No. 3              | 14.00 to   | 14.50   |  |
| Local Scotch, No. 1                    | 15.00 to   | 16.00   |  |
| Ohio Strong Softeners, No. 1           | 16.00 to   |         |  |
| Southern Silvery, according to Silicon | 15.50 to   |         |  |
| Southern Coke, No. 1                   | 14.50 to   |         |  |
| Southern Coke, No. 2.                  | 14.00 to   |         |  |
| Southern Coke, No. 3                   | 13.50 to   |         |  |
| Southern Coke, No. 1 Soft              | 10.00 to   |         |  |
| Southern Coke, No. 2 Soft              | 14.00 to   |         |  |
| Foundry Forge                          | 12.75 to   |         |  |
| Gray Forge and Mottled                 | 12.25 to   |         |  |
| Southern Charcoal Softeners, according | 12000      | 12.00   |  |
| to Silicon                             | 15.00 to   | 17.00   |  |
| Alabama and Georgia Car Wheel          | 20.00 to   |         |  |
| Malleable Bessemer                     | 14.50 to   |         |  |
| Standard Bessemer                      | 14.50 to   |         |  |
| Jackson County and Kentucky Silvery,   | 14.00 10   | 10.00   |  |
| 8 per cent, Silicon                    | 18.00 to   | 19.00   |  |
| e per cent, emcod                      | 70'00 10   | 19.00   |  |

Bars.-The largest manufacturers of both Iron and Steel Bars are becoming much more independent as their order books fill up. The aggregate of the business placed here since our last report has been very large, although the heaviest single sale reported was 4000 tons. Numerous orders have been entered for 1000 tons or the buyers include wagon manufacturers, car hore. The buyers include wagon manufacturers, car builders, railroad companies, and jobbers' prices are firmer, owing to the withdrawal from the market of large manufacturers who refuse to name quotations at present. The Republic Iron & Steel Company are starting up additional mills to enable them to make more satisfactory deliveries on business now being taken; this isfactory deliveries on business now being taken; this week the Frankton mill, in Indiana, was started. Mill shipments of Common Iron are quotable at 1.30c, to 1.35c.; Soft Steel Bars, 1.30c. to 1.35c., and Hoops, 1.95c., base, Chicago. The demand from local stocks continues as heavy as ever, and jobbers are still complaining of difficulty in securing shipments from mills to enable them to keep up assortments. Store prices are unchanged at 1.65c. to 1.75c. for Common Iron, 1.50c. to 1.65c. for Steel and 2c. to 2.20c. for Hoops.

Billets.—Quotations on 4 x 4 inch Bessemer Billets are unchanged at \$19.50 to \$20. No transactions are reported in ordinary Billets, but sales have taken place of special Open Hearth Billets for axles amounting to about 6000

Structural Material.—Considerable business continues to develop from outlying towns, but the nearby building trade is as quiet as it has been. Car builders and manufacturers of railroad supplies have placed additional orders for Shapes, particularly Channels and Angles. Quotations, mill shipments, are as follows: Beams, Channels and Zees, 15 inches and under, 1.65c.; 18 inches and over, 1.75c.; Angles, 3 inches and over, 1.55c.; Angles, under 3 inches, 1.35c.; Tees, 1.70c.; Universal Plates, 1.40c. From local yards small lots of Beams and Channels quoted 2.15c. to 2.35c.; Angles, 1.80c. to 1.90c. rates, and Tees, 2c. to 2.20c.

Plates.-Manufacturers have not entered much new business at the advanced prices but quite a heavy ton-nage has been booked on which quotations had been outhas been observed on which quotations had been outstanding. Mill shipments of Tank Plates, ¼-inch and heavier, are quoted at 1.40c., Chicago; Shell, 1.45c.; Flange, 1.50c.; Marine, 1.55c. Jobbers are enjoying an excellent demand from store, quoting small lots at 1.60c. to 1.70c. for Tank and 2c. for Flange.

Sheets.—Another week of heavy business is reported both manufacturers' agents and jobbers. The deby both manufacturers' agents and jobbers. The demand has been particularly large for Galvanized Sheets. Large buyers, who had been expected to wait until after the election, decided to hesitate no longer, but came into the market and covered their requirements. Mill shipments of No. 27 Black Sheets are quoted at 3.05c., Chicago, and Galvanized Sheets at 75 per cent. off. Jobbers in very few cases have full stocks of Galvanized Sheets; they have bought so conservatively that an improving demand has caught large houses with broken assortments. Small lots from store are quoted at 3.10c. to 3.15c. for No. 27 Black, 2.10c. to 2.20c. for No. 16, 1.85c. to 2c. for Nos. 10 to 14, and 70 and 5 to 70 and 10 off for Galvanized.

Merchant Steel .- Although season contracts are presumed to have been placed, an occasional buyer makes his appearance who has not as yet covered all his requirements. The current demand for small lots makes a good volume of business. Mill shipments. Chicago de-livery, are quoted as follows: Smooth Finished Machinto 1.95c.; Open Hearth Spring Steel, 2.15c. to 2.40c.; Toe Calk, 2.40c. to 2.60c.; Sleigh Shoe, 1.70c. to 1.90c.; Cutter Shoe, 2.40c. to 2.60c. Ordinary grades of Crucible Tool Steel are quoted at 6c. to 7c.; Specials, 13c. upward.

Merchant Pipe.—Jobbers are having a continued very

good demand, with continued scarcity in some sizes which are most frequently called for by the heating trade. Manufacturers' prices. random lengths, are as trade.

|    |          |               |      |            |    |    |            | In carloads.<br>Blk. Galvd. |         | 3. |
|----|----------|---------------|------|------------|----|----|------------|-----------------------------|---------|----|
| 14 | to<br>to | $\frac{1}{2}$ | inch | and<br>les | 11 | to | <br>inches | <br>59.2 - 46.2             | 54.9 40 | .9 |

Boiler Tubes are very firmly held, no concessions being made on the recent schedule. Quotations are continued

|                   |           | Steel. | Iron. |
|-------------------|-----------|--------|-------|
| 1 to 21/4 inches. | inclusive | 50     | 40    |
|                   |           |        | 4216  |
|                   |           |        | 50    |

Coke.—Quotations for 72-hour Coke are still \$4.50 to \$5, Chicago. Efforts are being made to secure reduced freight rates from the Coke regions to enable Coke to be laid down here at a lower price. The rates now pre-vailing are those which were made during the hight of

Rails and Track Supplies.—Little information is available concerning the tonnage of Rail contracts now being placed by the railroad companies, but it is believed that a large volume of business is being entered. The demand for Light Rails continues very good. Heavy Sections are quoted at \$26 and Light Sections at \$25.50 to \$28, according to weight.

Old Material.—The market is feverish and decidedly a difficult one to quote. Not much business is being done, as far as can be learned, although an occasional good sale is being made and quite a demand is reported for Old Iron and Steel Rails. The largest Scrap sale coming to light was one of 5000 tons of Steel Scrap. The situation is such that a buyer anxious for some special grade of material will perhaps pay a higher price than our quotations, while a holder of Scrap which he desires to move may be obliged to take a considerably lower move may be obliged to take a considerably lower ice. The following are approximate quotations per gross ton:

| Old Iron Rails\$16.00 to                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 816.50 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| Old Steel Rails, mixed lengths 10.00 to                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 10.50  |
| Old Steel Rails, long lengths 13.00 to                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 13.50  |
| Relaying Rails 18.00 to                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 20.00  |
| Old Car Wheels                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 15.50  |
| Heavy Melting Steel Scrap 9.50 to                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 10.00  |
| Mixed Steel 8.00 to                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 9.00   |
| Iron Fish Plates                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 16.00  |
| Steel or mixed do 9.50 to                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 10.00  |
| Iron Car Axles 18.50 to                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 19.00  |
| Steel Car Axles                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 15,50  |
| No. 1 Railroad Wrought 14.50 to                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 15.00  |
| No. 2 Railroad Wrought                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 13.00  |
| Shafting, Iron and Soft Steel 17.00 to                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 17.50  |
| No. 1 Dealers' Wrought 9.00 to                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 9.50   |
| No. 1 Mill                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 8.00   |
| No. 2 Mill. 6.00 to                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 6.50   |
| No. 1 Busheling. 8.50 to                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 9.00   |
| No. 2 Busheling                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 8.00   |
| Iron Car Axle Turnings 9.00 to                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 9.50   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 8.50   |
| DOLL DECE TENTO THE PROPERTY.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 7.50   |
| Mitchine Chop Laterage.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 6.50   |
| THE OUR PERSON NAMED IN THE PERSON NAMED IN TH | 4.50   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 5.00   |
| WEIGHT APOSTER WARE TO THE PROPERTY OF THE PARTY OF THE P | 9.00   |
| Aug. T Thomas Cont.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 8.50   |
| Boiler and Ship Scrap 8.00 to                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |        |
| No. 1 Cast                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 12.50  |
| No. 2 Cast                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 9.00   |
| Railroad Malleable Cast 12.00 to                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 12.50  |
| Agricultural Malleable Cast 10.00 to                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 10.50  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |        |

Metals.-No change has been made in the prices of metals. Lake Copper continues to be quoted at 17c. and Casting brands at 16%c. Desilverized Pig Lead stands firmly at 4.32%c. and Corroding 4.42%c. in 50-ton lots.

# Philadelphia.

Office of The Iron Age. Forrest Building. | PHHADELPHIA. PA.. November 5. 1900. | The attention of the trade is concentrated on the elec-tion to such an extent that there is comparatively little that can be said in regard to the Iron and Steel trade. In every direction, however, higher rates are being quoted, and very large sales were made late last week at advancing prices. It is difficult to say what will be done after the election, as the recent heavy purchases may have discounted that event, but there is not the least doubt that prices will be maintained even if no least doubt that prices will be maintained, even if no further advances are made. In some lines it is believed that manufacturers have a line of policy mapped out by which they will work in harmony, but they are not likely to make any announcement until the results of the election are definitely known.

Pig Iron,—Sales during the past week have been on large scale, and include all grades. Naturally there has been an inequality in prices, some at the low figures current during the past several weeks, but more at an advance of 25c. per ton, and some at 50c. advance. Prices to-day are extremely firm at the advance, and

1113

nie

813

some of the best informed houses are inclined to look for still higher figures before the market finds its level. Be that as it may, there is no Iron to be had now, unless at sellers' terms, which, as we said before, are 25c. to 50c. over last week's quotations. To-day's prices are about as follows for city or nearby deliveries: No. 1 X Foundry, \$16.50 to \$17; No. 2 X Foundry, \$15.50 to \$16; No. 2 Plain, \$14.75 to \$15.25; Standard Gray Forge, \$13.75 to \$14.25; Ordinary Forge, \$13 to \$13.25; Basic, \$14 to \$14.25; Low Phosphorus, nominal, \$22 to \$22.50.

Finished Material.—There is a very strong undertone in this department, work being plenty and prospects for its continuing so being of the most encouraging character. The advance in prices mentioned a week ago is fully maintained, and it is expected that if the election turns out as expected something additional will be required, as all the indications point to better prices for Pig Iron, Billets and other primary materials. It is remarkable how business has picked up within the last couple of weeks, the full capacity of the mills being required to make deliveries as promptly as required, and in some cases orders are being turned down simply because deliveries could not be promised as quickly as were required. For the present quotations are about as follows for deliveries at nearby points: Ordinary Tank Plates, 1.38c. to 1.45c.; Universals, 1.40c. to 1.50c.; Shell, 1.50c. to 1.60c.; Flange, 1.65c. to 1.75c.; Charcoal Iron, C. H., No. 1, 2.25c.; Best Flange, 2.75c.; Fire Box, 3.25c.; Best Refined Bar Iron, 1.33c. to 1.40c.; Bar Steel, 1.30c. to 1.35c.; Angles, less than 3 inches, 1.35c. to 1.40c.; 3 inches and upward, 1.65c. to 1.75c.; Beams and Channels, 15 inches and upward, 1.65c. to 1.75c.

Old Material.—There is quite a sharp demand for some descriptions, and in such cases very full prices have to be paid. Bids and offers for deliveries in buyers' yards are about as follows: Choice Railroad Scrap, \$16 to \$16.50; No. 1 Yard Scrap, \$13 to \$14; No. 2 Light Scrap, \$10.75 to \$11.50; Machinery Cast, \$13.50 to \$14.50; Heavy Steel Scrap, \$14.50 to \$15; Old Iron Rails, \$16.50 to \$17; Old Steel Rails, \$15 to \$15.50; Wrought Turnings, \$8.50 to \$9; Cast Borings, \$7 to \$7.50; Old Car Wheels, \$16.50 to \$17; Iron Axles, \$18 to \$19; Steel Axles, \$17 to \$18.

# St. Louis.

Office of *The Iron Age*, 1205 Chemical Building, St. Louis, November 5, 1900.

Pig Iron.—There was decided activity in the Pig Iron market during the past week. Sales footed up between 4000 and 5000 tons for local use, with probably 2000 tons additional from territory tributary to St. Louis. The purchasing seemed to have been fairly shared in by the various foundry interests, exclusive of car works. Requirements were covered for first four to six months of next year. Undoubtedly the values were favorable to buyers; it is considered that the prices were the lowest which will be reached this year, and lower than Iron could be bought at to-day. Most of the orders were given by concerns who felt at the time that the result of the Presidential campaign was a foregone conclusion. There is still some hand to mouth buying in evidence, but not to the extent noted a month ago. Negotiations involving several thousand tons are now under way, with fair prospet of being closed up in the next 24 hours. Prices are a little uncertain; one of the largest producers quotes of a basis of \$10 for No. 2 at Birmingham, but there is the ground for using the figures named below. The ireight rate from Birmingham to St. Louis is \$3.25. We quote f.o.b. cars St. Louis:

| Southern. | No.   | 1   | For | und | ry | <br>  |   | <br> | <br> | <br>813.75 | to   | \$14.00 |
|-----------|-------|-----|-----|-----|----|-------|---|------|------|------------|------|---------|
| Southern, | No.   | 0   | For | and | ry |       | 0 | <br> | <br> | 12.75      | to   | 13.00   |
| Southern, | No.   | 3   | For | and | ry | <br>0 | 0 | <br> |      | 12.25      | to   | 12.50   |
| No. 1 Soi | L     | 0 = |     |     |    |       | 0 | <br> | <br> | 13.75      | to   | 14.00   |
| No. 2 Soi |       |     |     |     |    |       |   |      |      |            |      |         |
| Grav For  | OP (D |     |     |     |    |       |   |      |      | 11 75      | 1100 | 12 00   |

Bars.—There is no decided change from the trade conditions which prevailed last week. The buying is of a steady, safe character. Some of the independent mills whose prices have been a trifle below that of the larger operators have made an advance to line up with the general market. Both Iron and Steel Bars are quoted by mills at 1.40c. to 1.45c., base, half extras, for heavy tonnage. Jobbers quote carloads from mill at 1.65c., full extras. Sales from store range from 1.75c. to 1.90c., full extras.

Rails and Track Supplies.—Mining and logging roads are sending in a steady run of orders for Rails of light section. Prices range from \$26 to \$29 per ton. Orders for Standard Rails from the big roads in this territory have not yet, it is said, been placed. Track Supplies are in good movement, with a slight reduction in quotable price of Spikes. We quote Splice Bars, 1.35c. to 1.75c.;

Bolts, with Square Nuts, 2c. to 2.10c.; with Hexagon Nuts, 2.10c. to 2.20c.; Spikes, 1.65c. to 1.75c.

Pig Lead.—There is a fair demand for Lead, but the week developed nothing more than spare purchasing for actual needs. Common Lead is quotable at 4.22½c. It is said that sales have been made at even a lower figure. Chemical is quoted at 4.25c. and Desilverized at 4.32½c. Lead Ore remained unchanged at \$46 per ton.

Spelter.—Inquiry was somewhat improved, but substantial results are still limited. There was a bid made at a shade over 4c. for a good tonnage, but conditions of delivery were prohibitory. The quotable price remains at 4c. to 4.02½c. The Prime Western Spelter Company are erecting two additional blocks of furnaces to their present smelter at Gas City, Kan. It is expected that the product of the new blocks will be available to the market by January 1. Some of the Western Spelter producers are about to establish a permanent joint selling agency at Pittsburgh. Zinc Ore maintained its top price of \$28.50 per ton.

# (By Telegraph.)

There is profound satisfaction expressed in business circles on the election result. An active buying movement has already set in. This market is credited with additional sales of Pig Iron amounting approximately to 12,000 tons over and above the tonnage reported elsewhere in this report. The buying was done by both large and small concerns. This activity is a clear fore-runner of what may be expected in the next few months.

# Cleveland.

CLEVELAND, Ohio, November 5, 1900.

Iron Ore .- The sudden end of the coal strike in the anthracite district operated to make as sudden a change in the attitude of lake vessels toward the business for the remainder of the year. A week ago all vessel owners were pessimistic about the lake rates, considering it impossible to make money with their boats, therefore they intended to lay them up for the winter. The inevitable result was a strengthening of all lake freights and especially those on Iron Ore, for it became known that there were certain cargoes at the head of the lakes and a number of others remaining at Escanaba and Lake Michigan points which were to be transported during the month of November. The opening up of the hard Coal district, with the prospect of up cargoes which it district, with the prospect of up cargoes which it brought, persuaded many of the owners to keep their boats in commission, and as a result the market is flooded with tonnage, but a very meager per cent. of the boats having gone to their docks. With a superabundance of tonnage and a comparatively limited supply of Ore to be brought down the lakes, the rate can be none other than weak. All indications are that everything will be late this year in connection with next season's Ore. The Ore producers have been expecting to fix their prices for next season, but after canvassing the situation carefully have come to the conclusion that it would be suicidal to fix prices now, hence the meeting of the Ore Association has been postponed until the mid-dle of January. The demand for a lower price on Iron Ore is so strong now that the producers believe that they would be compelled to accept a much lower price than they are at present willing to take. Until Ore has been sold the vesselmen cannot fix their contract carrying rates, hence this matter will be settled late also.

Pig Iron.—The increased sales of Iron during the last two weeks has had a tendency to strengthen the market, although not sufficiently as yet to warrant the furnacemen in demanding any more money for their product. The first indication was in the advanced price in off Irons. Sales have been made this week at \$12, which is the same price as has been paid in the recent past for Bessemer. The sales of Foundry Irons remain heavy, but without change as to price except that a stronger feeling prevails. All transactions of this week have been on the basis of \$14 and \$13.50 for Nos. 1 and 2 respectively. While the buying is heavier than it has been, there is still a tendency to hold on to the larger volume of business that is yet to be done.

Finished Material.—A meeting of the Plate pool has been held this week to consider whether or not it is advisable to lower the price or hold firmly at 1.25c., which was established a week ago. The decision arrived at was that in view of the demand for the product and the small amount of material to be sold the price should hold. Sales have been comparatively light. The increased interest in Shapes manifest a week ago proved to be but temporary, the market still being backward. A large tonnage is in sight, however, that is expected to be unlocked in the next few days when the results of the election have been reflected in the trade. The association

price has held firm, no further attempt being made to break them which might be attributed to the small business. This week has seen an increased demand for axles, car work among the railroads becoming heavier. The Lake Shore has just placed a large order and has other work in sight for the mills, which condition is general with the railroads in this vicinity. The Bar product being so far below the demand for them has stiffened the prices. Deliveries are either very slow or altogether impossible, and the mill men are quoting 1.15c. at the mills, which equals 1.25c. in this city, and as far as heard the consumers have made no objections, paying the price on some small orders, with a good sized business to be done presently at the higher figure.

Old Iron.—There is a tendency on the part of dealers to ask better prices than they have been getting, although no advances have been noted this week. The demand among the mills seems to be heavier than formerly. The market is reflected in the following quotations: No. 1 Wrought, \$14, net ton; Old Iron Rails, \$17.50, gross ton; Car Wheels, \$17.50, gross ton; Cast Borings, \$5.50, net ton; Wrought Turnings, \$8; Machinery Cast, \$12.50, net tons; Stove Plate, \$9, net; Steel Rails, \$12 gross tons.

# Pittsburgh.

Office of The Iron Age, Hamilton Building, PITTSBURGH, November 7, 1900.

(By Telegraph.)

Pig Iron.- A meeting of the Valley furnaces is to be held in Cleveland on Thursday, November 8, and it is intimated that the price of Bessemer Iron for next year may be put at \$14, Valley. In the face of the heavy stocks piled at the furnaces, it is somewhat difficult to see how Iron could be sold at that price, which is equal 10 \$14.90, Pittsburgh. The Pig Iron market is firm, but there have been no large sales since our last report. Some Bessemer Iron, piled at one of the Valley furnaces, is being offered in good sized lots and at low prices. Forge Iron, which sold last week at \$12.50, Pittsburgh, seems to be higher, and \$12.75 is being quoted. Foundry Iron has sold in good sized lots at \$13.75, while 814 and up to \$14.50 is quoted by some furnaces. quote Standard Bessemer Iron at \$13.25 to \$13.50; Gray Forge, \$12.75; No. 2 Foundry, \$13.75 to \$14.25, all f.o.b. Pittsburgh. We note a sale of 500 tons of standard Forge made last week at \$12.50, Pittsburgh, and also sales of probably 1500 tons at \$12, Valley furnace. This Iron does not come to this market. We also note a sale of 300 tons of standard No. 2 Foundry at \$13.75, delivered Pittsburgh.

Billets.—The Billet mills have apparently not given up their efforts to get the price of Billets up to about \$20, as another meeting is to be held in New York this week. We quote Bessemer Billets at \$17.50 to \$18, and reports are that sales have been made at less than our lower figure.

Sheet Bars.—We quote Sheet Bars, long lengths, at \$20, delivered Pittsburgh. Light Sheet and Tin Bars, cut to length, are quoted at \$22 to \$23, Pittsburgh.

Muck Bar.—We can note sales of probably 4000 tons of standard Muck Bars for extended delivery. We quote at \$24.50 to \$25, Pittsburgh.

# (By Mail.)

Buyers are forcing the market up on themselves. In the past month the result of the election has been largely discounted, and there has been a heavy buying movement, filling most of the mills up with tonnage and putting prices up \$2 or \$3 a ton on some lines. The whole market now is active and strong, with probability of still higher prices after the election. It is not expected, however, that there will be any boom in prices, as buyers by discounting the result of the election have already advanced the market on themselves, as stated above. There have been some sales of Bessemer Pig Iron at about \$13.25, Pittsburgh; Forge Iron at \$12.75, and Foundry is also bringing better prices. Steel is quoted at about \$18, but on round tonnage and extended delivery this price would be shaded. On Finished Material the market is active and the new price on Plates is, we are advised, being firmly held. Iron Skelp is in active demand and the market is higher.

Ferromanganese.—We quote 80 per cent. Ferro at the combination price of \$75 a ton in lots of 50 tons or over.

For small lots \$85 is quoted. Some 75 per cent. Ferro is being put on the market by a Southern interest at lower prices.

Plates.—Another meeting of the Plate mills was held in New York last week, and some detail work left over from the first meeting was completed. The new price of 1.25c., Pittsburgh, on Sheared Plates, Tank quality, 4-inch and heavier, is said to be firmly held. A good many buyers who had options on Plates at 1.15c. and even 1.20c. immediately exercised these, and in some cases tonnage was very much increased. There has only been a fair demand for Plates since the higher price was put into effect. However, there is a good deal of tonnage in sight, and the outlook is that the Plate mills will have plenty of work for the winter months. We quote: Tank, ¼ inch and heavier, 1.25c.; Shell, 1.30c.; Flange, 1.35c.; Marine, 1.45c.; all f.o.b. Pittsburgh. Fire Box Steel is 1.50c. for ordinary grades up to 2.75c. and 3c. for special grades.

Rails.—There is nothing of interest to report. The Rail mills are fully employed, with plenty of tonnage booked ahead. No large contracts have been placed in the past week. We quote Steam Rails, standard sections, at \$26 at mill.

Structural Material.—The leading Bridge interest have taken a large contract for Structural Steel for Germany. Some work for South Africa has been placed, and additional tonnage is pending. Part of the tonnage for the Lloyd pier at Hoboken went to a local mill. The bulk of the tonnage now being placed is for small lots, but it is claimed that some large jobs are held up pending the result of the election, and that if McKinley is re-elected a good deal of new work will immediately be given out. We quote: Beams and Channels, up to 15-inch, 1.50c.; over 15-inch, 1.60c.; Angles, 3 to 6 inches, inclusive, 1.40c.; over 6 inches, 1.50c.; under 3 inches, 1.25c.; Zees, 1.50c.; Tees, 1.55c.; Bars, 1.10c. to 1.15c.; Universal and Sheared Plates, 1.25c., all f.o.b. Pittsburgh.

Sheets.—In the past week there have been some large orders placed for Sheets for extended delivery, and buyers seem to have confidence that prices will not be lower, but on the contrary may advance. A good deal of tonnage is pending, and most of the small Sheet mills are sold up for several months. We quote No. 27 Black Sheets, box annealed, one pass through cold rolls, at 2.80c. to 2.85c.; No. 28, 2.90c. to 2.95c. Galvanized Sheets are 75 to 75 and 2½ per cent. off, 15c. freight, in carload lots.

Bars.—There is a good demand for both Iron and Steel Bars and prompt deliveries of the latter are, in many cases, hard to get. In fact, some of the leading mills rolling Steel Bars are so well filled up that they are naming prohibitory prices, not caring to take on any more tonnage, believing that the market will be higher. One leading local Bar mill is reported as holding Steel Bars firm at 1.20c. We quote Steel Bars at 1.15c. to 1.20c. at mill. It would take a very desirable specification to get a lower price than 1.15c., and it is doubtful if it could be done. Prices on Common Iron are firm, and we quote at 1.20c. to 1.25c. in carload lots at mill. High grade Iron Bars, made from all Muck Bar stock, are quoted at 1.45c. up to 1.60c.

Merchant Steel.—There is a better demand than for some time, and the market is firm with a decided upward tendency in prices. It is reported that some orders have been placed subject to cancellation in case of defeat of the present administration. Prices are firm, and we quote: Tire Steel, 1.25c. in carload lots, 1.30c. to 1.35c. in small lots; Toe Calk, 1.50c. in large lots and 1.60c. in small lots; Open Hearth Machinery, 2c. to 2.10c.; Plow Slabs, 1.65c. to 1.75c., base; Open Hearth Spring, 2c. to 2.10c.; Hammered Lay Steel, 3c.; Rolled Lay Steel, 2.50c.; Cold Rolled Shafting, 60 and 10 per cent. off in carloads; Tool Steel, 7c. and upward, according to quality. On Tool Steel freight is allowed east of the Mississippi River. Terms are 60 days, 2 per cent. off for cash in 10 days.

Skelp.—We note a very active demand for Iron Skelp, and prices on Grooved and Sheared are higher. We quote Grooved Iron Skelp at 1.55c. to 1.60., which is an advance of about \$2 a ton over former prices. Steel Skelp, Grooved and Sheared, is about 1.35c., delivered, Pittsburgh. Some mills have recently quoted as high as 1.65c. on Grooved Iron Skelp. There is a very active demand. The mills are full of tonnage and prompt deliveries are hard to obtain.

Iron and Steel Scrap.—There has been a decided improvement in demand for Scrap, and prices are also better, dealers being able, we are advised, to make sales at prices ranging from \$1 to \$3 a ton higher than could have been obtained a month or two ago. It is believed that if the result of the election is favorable prices will

be still higher. We quote No. 1 Railroad Wrought Scrap at \$14 net ton; Old Iron Rails, \$18; Old Steel Rails, \$13 to \$14; Tank and Pipe Scrap, cut, \$10.50; Turnings, \$6 to \$6.50; Cast Iron Borings, \$5.50 to \$6; Soft Busheling Scrap, \$12; Low Phosphorus Melting Stock, \$14 to \$15, all in gross tons. Old Horseshoes are about \$12 net ton.

Tubular Goods.-October was one of the best months the Pipe trade, in point of demand, for some time. A good deal of Pipe is going abroad, and some orders have been taken by the leading interest for South Africa. Prices to consumers in carload lots are as follows:

| alvd.                   |
|-------------------------|
| 18                      |
|                         |
| J.<br>53½<br>59<br>51½  |
|                         |
| . J.<br>19<br>55<br>57½ |
|                         |

| Roller                                                               | Tubes.    |                                                   |
|----------------------------------------------------------------------|-----------|---------------------------------------------------|
| Steel.  1 inch to 1½ inch and 2½ inch                                | Per cent. | 22 feet and over<br>Per cent.<br>44%              |
| 1¾ inch to 2¼ inch                                                   | 45        | $\frac{391/2}{521/2}$                             |
| 1 inch to 1½ inch and 2½ inch<br>1¾ inch to 2¼ inch<br>2¾ to 13 inch | 45        | $\frac{441}{391}$ $\frac{391}{2}$ $\frac{521}{2}$ |

Prices to jobbers are about 5 per cent. less than the

Connellsville Coke. The Coke trade is somewhat quiet. Last week there were 14,746 ovens in the Connellsville region active and 6014 idle. The output was 152,027 tons, an increase over the previous week of nearly 5000 tons. We continue to quote strictly Connells-ville Furnace Coke at \$2 and 72-hour Foundry at \$2.25 to \$2.50 a ton at oven. Some of the smaller Coke oper ators are offering Connellsville Coke, both Furnace and Foundry, at slightly lower prices. Main Line Coke is also being offered at much less prices than genuine Connellsville

# Birmingham.

BIRMINGHAM, ALA., November 5, 1900.

As indicated in last letter, the Iron market has improved very much. The inquiry has greatly increased and so have actual transactions. Both are widening in extent of territory and in the interests that are taking hold, and there has been very little difficulty in obtain-ing the market quotations. There were sales of Gray hold, and there has been very little difficulty in obtaining the market quotations. There were sales of Gray Forge at \$9 to \$9.50, No. 3 Foundry at \$9.50, and also rather heavy sales of Basic Iron at \$9.50. No. 2 Soft went at \$10, as well as No. 2 Foundry. There was one sale of Iron, 2000 tons, by analysis, at \$10.75. This is slightly above what would be the price of No. 1 Foundry. If there have been any sales at cut prices the secret has been well kept. There has been no necessity for it, as current quotations have been readily accepted by hypers. current quotations have been readily accepted by buyers The leading interest here have been prominent in steadying the market, as they refused all concessions below current quotations and notified their selling agents that it was useless to forward bids below them. The past recorded the largest sales for some time past. The week past. They equal fully a month's output with those so situated that they could sell freely. The buying has not been limited to special lines in the trade, but has leaped the barriers of separation and has been general. It is conservative to put down the week's sales at 80,000 to 85,000 tons. The most of it was for nearby deliveries, although a limited amount was placed for first quarter of 1901. export trade was keener in buying than for some time back. The purchases favored No. 3 Foundry and Basic, though some No. 2 Soft was taken. The probability of an advance in price at the close of the week was great and your readers need not be surprised to find the market marked up 25c. per ton when this appears in print. in print. Some ocean room was again offered for early in 1901 and promptly taken. Basic Iron is the leader of the herd in buying movements, and the way it has been taken the past week is regarded here as an indication of a healthy, continuous demand for some time to come. Some orders have been received contingent upon the election of McKinley. But they are not in sufficient number

or magnitude to cut any ice in the market.

The idle furnace at Ironton is in full blast again, but the one at Gadsden is yet out. The furnace practice here, particularly of the larger interests, shows that in the line of progression they have reached better results than ever obtained in their previous history. The strike the tribute of the Toppessee Company has prace at the steel plant of the Tennessee Company has prac-

tically been defeated. The strikers forced them to tically been defeated. The strikers forced them to all down operations to only one furnace, whereas they now have four in commission, and are running with every indication in due time of full employment of their com-plete battery of ten furnaces. The Bar and Rod malls with which the Tennessee Company have a contract Steel Billets, Slabs, &c., had to obtain supplies elsew steel Billets, Slabs, &c., had to obtain supplies elsewhere and succeeded in getting them in time to prevent any suspension of their business. Their orders have gradually increased until they now push the mill to supply them. In some of their departments they are running double shifts to keep in sight of the business offered. The Dimmick Pipe Works report a splendid business, not only equaling their expectations, but exceeding them.

Everything is going at full capacity and handsome orders

have been lately booked.

In Coal a large business has been and is being done The low water in the Ohio and Mississippi has shut out several Pittsburgh operators who had contracts to deliver Coal to important interests in South Louisiana. They have been compelled to fill some of their contracts with Alabama Coal, and their purchases so far foot up considerably over 100,000 tons. In the meantime those sections of the country dependent heretofore upon the river tows for supplies are placing their orders for Alabama Coal and making for it a lively market.

In emigration inquiry and interest are both growing. Near Mobile, one option on 30,000 acres of land has been secured to be closed in the event of McKinley's election. The colony is composed mainly of Swedes from the Western and Northwestern States. There has been and there is now being made a strong effort to place colonies along the railway lines as nuclei for flourishing settlements of thrifty and progressive labor.

#### (By Telegraph.)

All interests here have advanced prices for Iron 50c. per ton and have withdrawn all previous quotations. The demand is fine and is increasing. A further advance is very probable, as sales are becoming larger; in fact, in some places No. 2 Foundry is now held for \$1 advance.

# Cincinnati. (By Felegraph.)

Office of The Iron Age, Fifth and Main streets, Cincinnati. November 7, 1900.

The past week has been the most active one in the present year so far as the tonnage of Southern Pig Iron goes. The selling has covered all grades of Foundry Iron and also a very considerable quantity of Basic. majority of buyers were inclined to urgency in the mat-ter of delivery, though a fair tonnage was placed for the first quarter and even to last of the second quarter of 1901. Selling interests were far more ready to accept business on the basis of present quotations for prompt shipment than they were for next year deliveries. Some furnaces, while accepting orders for No. 2 Foundry on the basis of \$9.50. Birmingham, for quick shipment, were refusing later deliveries at less than \$10. The range of asking prices is almost as wide as it has been at any time lately, though the minimum figures moved up 25c. At the close of the week the bulk of selling is on the basis of \$9.50 to \$10, Birmingham, with the lower figure predominating in transactions. There is but very little doing in Forge Irons; 20,000 tons of Basic is reported sold at an advance of 50c. over the asking prices of a week ago. In tone the market is much improved and closes strong and active. Freight rate from Birmingham is \$2.75 to this point; from the Hanging Rock district, \$1. We quote, f.o.b. Cincinnati:

| Southern Coke, No. 1               |         |
|------------------------------------|---------|
| Southern Coke, No. 2               | 0 13.00 |
| Southern Coke, No. 3 11.75 to      |         |
| Southern Coke, No. 4 11.25 to      | 0 11.75 |
| Southern Coke, No. 1 Soft 13.25 to | 0 14,00 |
| Southern Coke, No. 2 Soft 12.25 to |         |
| Southern Coke, Gray Forge 11.25 to | 0 11.75 |
| Southern Coke, Mottled 11.25 to    |         |
| Ohio Silvery, No. 1 16.50 to       |         |
| Ohio Silvery, No. 2 15.50 to       |         |
| Lake Superior Coke, No. 1 15.00 t  |         |
| Lake Superior Coke, No. 2 14.00 to | 0 14.50 |
| Lake Superior Coke, No. 3 13.00 to | 0 13.50 |

· Car Wheel and Malleable Irons,

Standard Southern Car Wheel, chilling grades \$20.75 to \$21.25 Standard Southern Car Wheel, No. 2 19.75 to 20.25 Lake Superior Car Wheel and Malleable 19.00 to 20.00

Plates and Bars .- There has been an increase in ac-Plates and Bars.—There has been an increase in activity and a general strengthening in feeling. We quote. f.o.b. Cincinnati: Iron Bars, in carload lots, 1.45c., with half extras; in small lots, 1.70c., with full extras; Bar Steel, in carload lots, 1.35c., with half extras; in small lots, 1.70c., with full extras. Iron Bar Angles, 1½ x 3-16 inch and larger in ear lots, 1.70c. in small lots, 2.20c. inch and larger, in car lots, 1.70c.; in small lots, 2.20c.:

Sheets, No. 10, 2.20c.; No. 27, Steel, 2.95c.; Plates, 1.65c.

Old Material.—The situation continues very quiet and the basis of trading is unchanged. Dealers' buying prices per gross ton, f.o.b. Cincinnati, are about as follows: No. 1 Wrought Railroad Scrap, \$11 to \$12; Cast Railroad and Machine Scrap, \$10 to \$11; Iron Axles, \$14 to \$15; Iron Rails, \$12 to \$13; Car Wheels, \$14 to \$15.

# The British Iron Market.

Summary.—The Iron and Steel trades have presented few new features during the past week. There has been no real improvement on the whole, and where a better tone has made its appearance it has generally proved to be ephemeral. Pig Iron is still dull, and although some better inquiries are reported, business is still confined within narrow limits. In the finished branches the demand lacks strength, and several reductions have taken place. The feature of the engineering trades this week has been the heavy weight of orders for locomotives placed in Glasgow and elsewhere. On the Continent business continues quiet.

Pig Iron.—Transactions in Pig Iron continue comparatively few and unimportant. Prices, which are usually a reliable index to the position of trade, are weak, and although in most cases they show no actual fall, they are maintained with difficulty in some quarters, and small reductions are reported from others. The position of Cleveland and Scotch warrants has been reversed, for the latter, which last week were quoted 1 shilling below Cleveland, are now 4½ pence above. It is noteworthy that the Cleveland Hematite market, which was so stoutly maintained while ordinary Cleveland Iron was falling, is very weak, and while the latter is now only about 4 shillings below the best prices of this half year, Hematite has in some four or five weeks declined between 6 shillings and 7 shillings. The following is a statement of the public stocks of Pig Irons in tons:

| Connal's at Glasgow                                                    | Decrease<br>during 1900,<br>Tons.<br>166,000 |
|------------------------------------------------------------------------|----------------------------------------------|
| Connal's at Middlesbrough                                              | 52,400                                       |
| Connal's at Middlesbrough, hematite 555<br>Hematite, West Coast 36,670 | 8,948<br>160,388                             |

Manufactured Iron and Steel.—In the finished branches business has been slow, and several reductions in prices are reported. At Middlesbrough Steel Boiler Plates are down 5 shillings to £9 15s., Iron Ship and Girder Rivets 10 shillings to £11 5s., Iron Ship Plates to £7 12s. 6d., Iron Girder Plates to £7 17s. 6d., Iron Boiler Plates to £9 5s., and Steel Ship Plates to £7 10s. These reductions have been mainly brought about by keen German competition. There are reports of German Plates being bought for the Clyde and the Tyne. In Glasgow Steel Ship Plates are now reduced to £7 15s. to £7 17s. 6d. The basis of quotation for Lancashire Bars remains at £9 10s., and in South Staffordshire Marked Bars are still at £11 10s., with Common Iron at £9 15s. The general demand shows no improvement, but most of the works are fairly busy, the small orders being mostly for prompt delivery. In the Steel trade business appears to be good in Barrow and in South Staffordshire, but in Manchester the market has a weak, irregular tone, and there is not much doing.

Engineering and Shipbuilding.—In the engineering trade the general outlook is not altogether satisfactory. Locomotive builders report a large weight of orders on the market, more than sufficient to keep establishments fully going over the ensuing year, the only question being whether a considerable portion of the work to be given out may have to go elsewhere owing to English firms being unable to offer sufficiently early delivery to meet requirements. All branches of electrical engineering also continue exceptionally busy. Taking, however, the general engineering branches, such as Machine Tool making and Stationary Engine building, they are securing only a comparatively small weight of new work. Shipbuilders have not booked much work this week, but one or two small orders are reported.

Foreign.—In France the absence of buying is telling seriously upon the situation of the mill and forge owners, and it is becoming more and more doubtful whether makers will be able to secure enough work to keep their mills running regularly during the winter months. Mill and forge owners in Belgium have recently been entering into negotiations with blast furnace proprietors, in the hope of being able to come to some satisfactory arrangement with respect to future supplies of Iron, but as the Pig Iron producers declare that they cannot offer any special terms the negotiations have fallen through. The depression in the German Iron trade is becoming more

accentuated every week, and prices of nearly all descriptions of material are moving downward.

Comparison of Prices.—The annexed table shows the current prices compared with those of last week, and of the corresponding period last year:

|                                                                                                                                                                                                                                                                                                                      |                      |                                                     | . 25,<br>00.                          |                        | 190                  | . 18,                            | (                     | )et.<br>189                                      |                                            |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-----------------------------------------------------|---------------------------------------|------------------------|----------------------|----------------------------------|-----------------------|--------------------------------------------------|--------------------------------------------|
| Iron Ore—                                                                                                                                                                                                                                                                                                            |                      | 8.                                                  | d.                                    |                        | 8.                   | d.                               |                       | 8.                                               | d.                                         |
| Rubio, Middlesbrough<br>Rubio, Cardiff<br>Pottery Mine, North Staffordshire.                                                                                                                                                                                                                                         |                      | 20<br>20<br>20                                      | 6 6                                   |                        | 21<br>19<br>90       | 3<br>6<br>6                      |                       | 18<br>16<br>17                                   | 6 9 6                                      |
| Hematite, West Coast (at mines)                                                                                                                                                                                                                                                                                      |                      | 19                                                  | 6                                     |                        | 19                   | 6                                |                       | 16                                               | 6                                          |
| Pig Iron— No. 3 Foundry, Middlesbrough Warrants Scotch Warrants, Glasgow Hematite Warrants, West Coast Cold Blast (Foundry), South Staf-                                                                                                                                                                             |                      | 68<br>66<br>66<br>78                                | 9<br>0<br>4½<br>6                     |                        | 67<br>67<br>66<br>76 | 9 6 3 3                          |                       | 69<br>69<br>70<br>75                             | 9<br>7<br>8<br>11                          |
| Welsh Hematite, Cardiff                                                                                                                                                                                                                                                                                              |                      | 80                                                  | 0                                     |                        | 80                   | 0                                |                       | 82                                               | 6                                          |
| Manufactured Iron and Steel— Marked Bars, South Staffordshire Common Bars Steel Rails, Middlesbrough Steel Rails, West Coast Steel Rails, Cardiff Steel Angles (eng.), Middlesbrough Steel Angles (eng.), Glasgow Steel Plates (ship), Middlesbrough Steel Plates (ship), Middlesbrough Steel Plates (ship), Glasgow | £ 111 9 77 77 8 8 77 | 8.<br>10<br>15<br>2<br>2<br>0<br>7<br>0<br>10<br>15 | d.<br>0<br>6<br>6<br>0<br>6<br>0<br>6 | £ 11 9 7 7 7 8 8 8 8 8 | 7                    | d.<br>0<br>6<br>0<br>6<br>0<br>0 | £. 10 9 6 6 6 7 7 7 8 | 8.<br>0<br>0<br>17<br>15<br>12<br>17<br>10<br>17 | d.<br>0<br>0<br>6<br>0<br>6<br>0<br>6<br>0 |
| Tin Plates, Bessemer IC Cokes, South<br>Wales                                                                                                                                                                                                                                                                        |                      | 8.<br>14                                            | d.<br>0                               |                        | 8.<br>14             | d.<br>0                          |                       | 8.<br>15                                         | 6                                          |

-Iron and Coal Trades Review, October 26, 1900.

# The German Iron Market.

Essen, October 24, 1900.—Since my last report confidence in the position of the German Iron market has suffered more. The demand is inadequate in nearly all branches, and the number of works which must lie idle for one or two days per week on account of lack of orders grows steadily. The greater number of manufacturers have orders on their books for many months to come, but specifications are not being received, so that there is a scarcity of work from day to day. As yet there is no indication of accumulations of Pig Iron, but the fact must be taken into account that there is no means of judging what are the stocks at the large mills which produce their own Pig Iron. It is certainly a fact that the demand for Pig Iron is exceedingly light and is not keeping pace with the production. Prices are as follows: Spiegeleisen, 10 to 12 manganese, f.o.b. Siegen, 110 marks; Special Mill Iron, f.o.b. Siegen, 90 marks; Bessemer Pig, 100 marks; Foundry Iron No. 1, 102 marks; Foundry Iron No. 3, 98 marks; Ordinary Mill Iron, 85 to 86 marks, all f.o.b. furnace; Basic Pig, 89 to 90 marks, delivered Steel works; No. 3 Luxemburg Foundry Iron, 82 marks, and Luxemburg Mill Iron, 80 marks, f.o.b. Ruhrort.

No changes have taken place in the Ore market, the supplies coming steadily and in considerable quantity. Since there have been no recent sales prices cannot be quoted. In the Steel market deliveries have fallen off considerably, and there is no question whatever of a lack of supply. Small quantities are being sold occasionally for immediate delivery, the prices being 125 marks for Ingots, 130 marks for Blooms, 135 marks for Billets, 139 to 140 marks for Slabs, per ton f.o.b. Rothe Erde, Diedenhofer, Ruhrort or Dortmund. These quotations apply to ordinary basic quality, Bessemer costing 10 marks, and Open Hearth 15 marks more per ton.

In Old Material the situation is growing very serious.

In Old Material the situation is growing very serious. The demand is very small and the offerings are urgent. Under these circumstances prices have dropped to a point close to that reached in the worst of times.

There is little demand for Bars, particularly for Iron Bars. The fact that the makers of Iron Bars succeeded some time since in carrying the price up to 220 marks, and holding it there, has led many consumers who had clung to Iron until then to begin to work up Steel Bars. To-day Iron Bars are readily obtainable at 180 marks, while Steel Bars are quoted 170 marks and for large blocks for early delivery they could be purchased at considerably lower prices, since the mills are eager for work.

The Hoop and Band mills have inadequate employment. While it is true that the association is trying to hold the price at 195 to 197.50 marks, it is a question whether they will be able for any length of time to maintain it in view of the scarcity of work. The conditions are similar in the Sheet and Plate market, particularly as to the former. At the present time negotiations are in progress at Berlin for the renewals of the Plate syndicate, which expires by limitation next summer, and for the formation of a Sheet syndicate. Telegrams received from Berlin indicate that the prospects of success are favorable. In Bars, as well as in Sheets, the market has been very much affected by the fact that dealers who bought heavily some time since are now endeavoring, by hook and by crook, to dodge their obligations.

Business in Beams is very quiet, owing to the fact that the building trades are doing very little. The official syndicate price of 140 marks, f.o.b. Burbach, is largely cut by dealers. Tube business is in a very unfavorable position, the works suffering from the competition in the world's markets since the home demand is inadequate to take care of the production, greatly increased through the building of new works. There is an active inquiry for Cast Iron Pipe of the smaller and medium sizes. The unfavorable situation continues in the Wire business, the syndicate price of 185 marks for Steel Wire Rods being thoroughly nominal. The car shops are actively employed and further orders are in sight. The machine shops are still doing a good deal of work, although new orders are coming in very slowly. The structural shops have been getting some contracts from South Africa.

Perhaps it may interest the readers of *The Iron Age* to note that a newspaper in this place announced that in the last few days 15,000,000 tons of Rails were placed in the United States. How enormously, then, your mills are employed!

# New York.

Office of The Iron Age, 232-238 William street, NEW YORK, November 7, 1900.

Pig Iron.—The buying movement continued during the past week and the market has strengthened. It is yet too early to judge to what extent the election has been discounted during the last three weeks, but it is believed that a good volume of prompt requirements are still to be covered. Sellers are holding for higher prices while that question is being tested. Quotations are as follows at tidewater: Lehigh, Schuylkill and Virginia Irons, No. 1, \$16.50 to \$18; No. 2 X, \$15.25 to \$16; No. 2 Plain, \$14.25 to \$15; Gray Forge, \$13.75 to \$15. Tennessee and Alabama brands, No. 1 Foundry, \$15.25 to \$15.50; No. 2 Foundry, \$14.25 to \$14.50; No. 1 Soft, \$15.25 to \$15.50, No. 2 Soft, \$14.25 to \$14.50; No. 3 Foundry, \$13.75 to \$14; No. 4 Foundry, \$13.25 to \$13.50; Gray Forge, \$13 to \$13.25.

Cast Iron Pipe.—The contracts involving about 30,000 tons for the Brooklyn and Bronx water lines have been placed, the greater part of the work going to outside shops. There is little new business of magnitude coming up. We quote \$23.25 to \$23.50 for 8-inch Pipe per gross ton.

Steel Rails.—Very little new business has been placed. It is understood that contracts for considerable quantities of Rails have been held back to await the result of the elections. We quote \$26 for Standard Sections, \$25 and \$26 for Light Sections, and \$38 to \$38.50 for Girder Rails. We quote Spikes, 1.45c. to 1.50c.; Splice Bars, 1.25c. to 1.35c.; Square Track Bolts, 2.05c. to 2.15c., and Hexagon Bolts, 2.20c. to 2.25c.

Finished Iron and Steel.—Some good contracts for buildings have been placed in this city, three of them calling in the aggregate for about 8000 tons. It is expected that further work will come out at an early date. We quote as follows at tidewater: Beams, Channels and Zees, 1.65c. to 1.70c.; Angles, 1.30c. to 1.40c.; Tees, 1.65c. to 1.75c.; Bulb Angles and Deck Beams, 1.90c. to 2c.; Universal Mill Plates, 1.25c. to 1.30c.; Sheared Steel Plates are 1.35c. to 1.40c. for Tank, 1.50c. to 1.60c. for Shell, 1.60c. to 1.75c. for Flange, 2.25c. to 2.30c. for Fire Box, 3.50c. to 4c. for Locomotive Fire Box, on dock. Charcoal Iron Plates are held at 2.25c. for C. H. No. 1, 2.75c. for Flange, and 3.25c. for Fire Box. Refined Bars are 1.30c. to 1.35c.; Common Bars, 1.15c. to 1.25c.; Soft Steel Bars, 1.15c. to 1.30c., and Hoops, 1.90c. to 2.25c., base, on dock.

F. M. Eaton, sales agent of the Virginia Iron, Coal & Coke Company, announces that Crocker Brothers of 99 John street, New York, and N. S. Bartlett & Co., 60 State street, Boston, Mass., have been appointed the sole and exclusive joint agents for the sale of the Pig Iron product of the company for the territory east of the Alleghany Mountains from Richmond, Va., to the lakes, and also Canada and the Provinces.

# Metal Market.

Office of The Iron Age. 232-238 William street, NEW YORK, November 7, 1900.

Pig Tin.—During the few days of the week under review preceding election day there was an extremely small amount of business transacted. To-day the market was quite unchanged and could easily be termed inactive. The nominal quotation to-day was 28c, for spot and

November. This is a shade firmer than the figure of a week ago. In London the market was pretty active yesterday and to-day. This was especially the case as regards futures. The closing London quotations to-day are £127 for spot and £124 for futures.

Copper.—While the market is still quiet and quota tions remain unchanged, there is a tendency on the part of producers to hold out a little more firmly. As one producer put it, "When I get an order for a number of carloads for immediate shipment I send half of the amount ordered, and I am not engaging so far ahead as I did a week ago. The tone seems to be stronger, and while last week I might have sold Casting stock for 16.60c, I am now holding out for 16%c." The figure given for Lake Superior Ingot is still 16%c. Electrolytic and Casting are quoted 16%c. The London market was firmer, closing £72 10s. for spot and £73 2s. 6d. for three months futures. Best Selected is 5 shillings better, coming today £78 15s. 5d.

Pig Lead—Is without change. The demand has not gone above the recent low level, and the American Smelting & Refining Company still quote 4.37½c. New York and 4.32½c. St. Louis. The London market is unchanged at £17 12s. 6d.

Spelter—Is unchanged as to actual quotations, but the trade are holding a shade firmer as to price. Advices from St. Louis do not mention a change in prices, but certain merchants in this city predict an advancing market, and are holding out for better propositions. The prices quoted on the New York Metal Exchange are 4.10c. to 4.15c., but many members of the trade are inclined to hold to the latter figure. After having declined to £18 11s. 3d. the London market reacted to £19, which was the closing price to-day.

Antimony—Is unchanged, Hallett's being quoted  $9\frac{1}{2}c$  and Cookson's  $10\frac{1}{2}c$ .

Nickel.—The supplies at hand having been practically exhausted, the great scarcity of this metal continues, and it is stated that it will continue for the balance of this year. Consumers who are in immediate need of small quantities are paying fancy prices. The nominal quotation is still 55c, to 60c, for small lots.

Quicksilver--Is unchanged, prices here being \$51 per flask of 76½ lbs. in lots of 50 flasks and more. The London quotation is unchanged at £9 2s. 6d.

Tin Plate.—Business continues in a fairly active way at unchanged prices. The American Tin Plate Company are still quoting on a basis of \$4.19 per box of Standard 100-lb. Cokes, New York delivery, or \$4 f.o.b. mills.

A party of Pittsburgh business men have organized a company to be called the Iron City Sanitary Mfg. Company, and expect to place in operation by December 1 a plant at Zelienople, Butler County, about 35 miles from Pittsburgh, on the Pittsburgh & Western division of the Baltimore & Ohio Railroad. The company will manufacture and market a special line of bathtubs, plumbers' supplies and enameled ware of various kinds. The company have applied for a charter and expect to receive it on November 19. The new company have a capitalization of \$100,000, and have purchased a plant covering about 10 acres of ground near Zelienople. There are five large new brick and steel buildings in the concern and a number of others will be erected as soon as the charter is secured. The present buildings were erected some time ago for the Blackham Mfg. Company, a similar concern to that which has just been organized, but were never occupied, owing to the dissolution of the company before a charter could be secured. The buildings were bought for the Pittsburgh Company by William B. Scaife & Sons. The buildings are now being equipped with modern machinery. The plant will be operated by electricity and a separate building will be erected in which an electric plant will be installed. It will be lighted throughout by arc lamps. The company already have large numbers of orders booked.

The engineer sent by the Government of Nicaragua to remove into the interior of the country the rails and other materials of the railroad constructed in 1889 by the Maritime Canal Company of Nicaragua, and chartered by the Government of the United States, running from San Juan del Norte (Greytown) 10 miles along the contemplated route for the inter-oceanic canal, has found the roadbed, cross ties, &c., in such excellent condition that he has recommended to the Nicaraguan Government not to interfere with the line, but to extend it for about 18 miles to Sarapiqui, on the Rio San Juan del Norte, whence there is a sufficient depth of water for steamboats to navigate all the year to Lake Nicaragua.

# PERSONAL.

H. F. Frevert, formerly with the Garvin Machine Company, has associated himself with the Niles Tool Works Company, with headquarters at 136 Liberty street, New York.

On November 1 James A. Campbell retired as district manager of the mills of the Republic Iron & Steel Company in the Youngstown district, to become trustee of the Continental Iron Company, at Niles, Ohio. The for-mer employees of Mr. Campbell presented him with a silver dinner service. On the same date Thomas Par-rock, formerly district manager for American Steel Hoop Company, succeeded to the position made vacant by the resignation of Mr. Campbell.

Dr. W. B. Phillips of Pittsburgh, formerly editor of the American Manufacturer, has been appointed State geologist of Texas.

The will of Frank Williams, late of Johnstown, Pa., makes a bequest of \$300,000 to the Lehigh University, at South Bethlehem, for the benefit of worthy students. The will provides that the income be loaned to students at the university who are unable to pay their way through college. Their notes are to be taken for the amount borrowed, and the money, when returned, is to again be placed in the fund.

H. Holliday of the Consett Iron Works, Blackhill, Durham, who has been studying the situation in this country for some time, sailed for home yesterday.

Joseph E. Schwab, general superintendent of the Duquesne Steel Works and blast furnaces, has appointed Philip Davies superintendent of the new 40-inch blooming mill that is being built at the Duquesne Works.

President McKinley has been invited to attend the regular annual dinner of the Pittsburgh Chamber of Commerce, to be given in that city some time this month. The exact date has not been arranged, but it will be made to suit the convenience of the President, providing he will agree to attend.

Walter Hoffman, formerly chemist for the American Steel Casting Company, has gone to Chicago to accept a position with the Gates Company.

The Erie County Investment Company of Sandusky, The Eric County Investment Company of Sandusky, Ohio, have brought suit to recover \$2000 from the Grant Machine Tool Works of Cleveland. The plaintiffs allege that some time ago the Grant Company approached them with a proposition for the removal of the Grant plant to Sandusky, and on the strength of this the Investment Company secured subscriptions for \$40,000 worth of stock and \$60,000 worth of bonds. Later the Grant Company appropried that they had secured a more favorable. pany announced that they had secured a more favorable proposition from Franklin, Pa., and the plant is to be located in that city. The plaintiffs claim commissions for their work in securing the sale of stocks and bonds, alleging that they were used simply as a lever to induce the Pennsylvania people to make a better proposition. The case will be watched with considerable interest by cities that are endeavoring to locate factories.

The Sandusky, Ohio. Water Works Department have opened bids on a 10,000,000-gallon pumping engine. The Henry R. Worthington Company, New York, made four proposals on different types of engines: 1, high pressure horizontal, delivered and erected on foundation to be provided by themselves, \$23,900; 2, low pressure horizontal engine, delivered and erected on foundations provided by themselves, \$19,300; 3, triple expansion condensing engine, delivered and erected on foundation provided by themselves, \$22,350; 4, triple expansion condensing engine, delivered and erected on a foundation provided by the city, \$20,165. Allowance on old pumps \$2000 each case. George F. Blake Mfg. Company, New York, Blake compound duplex inside plunger engine, delivered and erected, \$46,330. Camden Iron Works, Camden, N. J., one horizontal compound direct acting condensing pumping engine, delivered and erected on foundation provided by themselves, \$16,995.

Hawkridge Bros., Boston, Mass., for many years New England agents for Sanderson Bros. Steel Company, were appointed November 1 by the Crucible Steel Company of America agents for the sale of Park Steel Company pany's product in the same territory, in addition to the Sanderson agency, which they retain. Park Steel Com-pany's store in Boston will be discontinued and the stock transferred to Hawkridge Bros., who will occupy larger quarters in a new location.

# The Metropolitan Pipe Contracts.

Bids were received last Thursday by Commissioner Dalton of the Department of Water Supply, New York, for about 30,000 tons of cast iron water pipe, fittings and stand pipes. The bids were for furnishing, delivering and laying the work, which was divided into two sections. About 22,500 tons of the work will be required in laying a 48-inch double pipe line between the Milburn engine house, Brooklyn, and the Milburn efflux chamber, and for a single pipe line from that point to the Gate Chamber, at Spring Creek. This work involved 22,500 tons of 48-inch straight cast iron pipe, 35 tons of 36-inch, 6 tons of 30-inch, 25 tons of 24-inch, 4 tons of 20-inch, 7 tons of 18-inch and 10 tons of 12-inch. There are also 337 tons of special castings, 33 check valves and stop cocks, ranging from 48 to 12 inches, and two stand pipes, 80 feet high and 78 inches inside diameter. There are also included 15,000 pounds of cast iron, manholes, &c., 40,000 pounds of steel I beams and a quantity of wrought iron work. There were 65 items bid on, but the contract will be given to the lowest bidder in the aggregate. The aggregate bids were as follows:

Wm. H. Masterson, \$870,397. John McNamee, \$918,021. Nassau Construction Company, \$926,425.11. Thilemann & Smith, \$950,106. Daniel J. Creen, \$965,553.50. W. V. Crawford Company, \$979,926.75.

The second section of the work includes 7110 tons of straight 48-inch pipe, 80 tons of specials, 29 stop cocks, ranging from 48 to 6 inches, and 9 hydrants. The material will be used in laying mains in Mosholu Parkway, Bronx Park, Southern Boulevard and Potter place. The bids were as follows:

Thilemann & Smith, \$253,853.50.
Wm. H. Masterson, \$263,925.50.
Michael Redmond, \$274,387.
Wm. F. Norton, \$281,029.
Wm. G. Leeson, \$291,544. John Cornwell, Jr., \$292,055. Henry Lipp, Jr., \$302,524. Thomas Crimmins, \$343,260.

# OBITUARY.

FRANK P. WICK.

Frank P. Wick of Youngstown, Ohio, who has been in ill health for more than a year, died last week. Mr. Wick was born in Youngstown in 1847 and passed his entlre life there. He was for many years engaged in the iron business, being superintendent for a long time of the mills of Mahoning Valley Iron Company until that property was taken over by the Republic Iron & Steel Company, after which he engaged in the coal business.

The Wm. B. Pollock Company, Youngstown, Ohio, builders of steel and iron plate construction for blast furnaces, steel works, &c., have been awarded the contract for all the iron work for a blast furnace in a foreign country. The name of the concern placing the contract is withheld for business reasons. The furnace will be an 80-foot stack, with an 18-foot bosh, four hot blast stoves 80 feet and 19½ feet in diameter. Work will be commenced on this important contract at an early date, and a considerable number of men from the Youngstern Works will be some to the other wide to do the work. town Works will be sent to the other side to do the work.

The city of Caracas, Venezuela, was visited on Monday by a severe earthquake, which inflicted great damage on the buildings of the city and caused the loss of a number of lives. The United States Legation was badly injured, but the occupants escaped unhurt.

A number of the colored graduates of the Tuskegee Normal and Industrial Institute of Tuskegee, Ala., have been engaged by the German Government to go to West Africa for the purpose of introducing the raising of cotton in the German colonies in that region.

The manager of the Syracuse Smelting Works of Syracuse, N. Y., L. Sapery, has returned from a two and one-half months' trip to Europe, and has made arrangements for representation in London and Birmingham, England, as well as in Scotland. He has also taken several large orders for babbitt metal to be shipped abroad and has also made large purchases of raw ma-

# QUOTATIONS OF IRON STOCKS DURING THE WEEK ENDING NOVEMBER 7, 1900.

| Pro-          |                                        |             |             |             |             |          |             |        |
|---------------|----------------------------------------|-------------|-------------|-------------|-------------|----------|-------------|--------|
| Cap'l Issued. |                                        | Thursday.   | Friday.     | Saturday.   | Monday.     | Tuesday. | Wednesday.  | Sales  |
| \$29,000,000  | Am. Car & Foundry, Common              |             | 1714-171/2  | 17%-17%     | 18 -18%     |          | 191/4-20    | 19,043 |
| 29,000,000    | Am. Car & Findry, Pref. (7 % Non-Cu.)  |             | 63%-64%     | -641/4      | 641/4-641/2 |          | 65 -66      | 5,43   |
| 19,000,000    | Am. Steel Hoop, Common                 | 221/4-231/4 | 221/4-223/4 | 22%-231/4   | 23%-24%     |          | 251/2-271/2 | 20,463 |
| 14,000,000    | Am. Steel Hoop, Pref. (7 % Cu.)        |             | 7414-7416   | 741/2       | 741/2-75    |          | 75 -77      | 1.500  |
| 50,000,000    | Am. S. & W., Common                    |             | 341/2-35    | 35 -35%     | 351/2-361/2 |          | 371/4-401/4 | 81,91  |
| 40,000,000    | Am. S. & W., Pref. (7 % Cu.)           |             | 75 -751/4   | 75%-7614    | 751/2-77    |          | 771/2-801/4 | 11,86  |
| 28,000,000    | Am. Tin Plate, Common, N. Y            |             | 33 -331/4   | -33         | 341/4-343/4 |          | 36 -371/4   | 8,231  |
| 18,325,000    | Am. Tin Plate, Pref., N. Y. (7 % Cu.)  |             | 8214-82%    | -821/2      | 831/4-831/2 |          | 85 -86      | 3,30;  |
| 7,500,000     | Bethlehem Iron†                        |             | -56%        |             | 56%-56%     |          |             | 30     |
| 15,000,000    | Bethlehem Steel, Par \$50, \$1 paid in |             |             | *****       | 161/4-161/2 |          | 17%-18      | 600    |
| 7.974.550     | Cambria Iron, Phila*                   |             |             |             | -45         |          | 1172-10     | 2      |
| 36,000,000    | Cambria Steel**                        |             | 1514-151/2  | 15%-16      | 16 -1614    |          | 17%-17%     | 3.90   |
| 11,000,000    | Col. Fuel & Iron                       |             | 38 -381/4   | 3814-391/8  | 391/2-401/4 |          | 42 -441/2   | 14,90  |
| 46,484,300    | Federal Steel, Common                  |             | 37%-38%     | 3814-3934   | 40 -411/2   |          | 43 -45      | 79.61  |
| 53,253,500    | Federal Steel, Pref. (6 % Non-Cu.)     |             | 671/2-68    | 681/2-69    | 6914-6934   |          |             | 15,86  |
| 32,000,000    | National Steel, Common, N. Y           |             | 29 -29%     | 2914-2934   | 30 -311/4   |          |             | 18,66  |
| 27,000,000    | Nat'l Steel, Pref., N. Y. (7 % Cu.)    | 871/2-873/4 | 87%-88%     | 881/4-89    | 89 -90      |          |             | 2,46   |
| 40,000,000    | National Tube, Common, N. Y            | 531/4-531/2 | 531/4-531/2 | 531/2-541/4 | 541/2-561/4 |          | 58 -60      | 23,16  |
| 40,000,000    | National Tube, Pref., N. Y. (7 % Cu.)  |             | 9814-9814   | 98%-98%     | 9834-99     |          |             | 6.08   |
| -5,000,000    | Penna., Common, Philadelphia           |             | ******      |             | ******      |          |             | 61     |
| 1,500,000     | Penna., Pref., Philadelphia            |             |             | -92         |             | ******   |             | 2      |
| 12,500,000    | Pressed Steel, Common                  |             | 43 -44      | 441/2-47    | 461/4-481/4 | ******   | W 0         | 7.01   |
| 12.500,000    | Pressed Steel, Pref. (7 % Non-Cu.)     |             | -82         | 83 -831/4   | 831/4-84    |          |             |        |
| 27,191,000    | Republic Iron & Steel, Common          |             | 1314-1354   | 13%-14%     | 1414-15     |          |             | 2,47   |
| 20,306,900    | Repub. Iron & Steel, Pref. (7 % Cu.)   |             | -56%        | -57         | 57 -59      |          |             | 12,71  |
| 7,500,000     | Sloss-Sheffield S. & I., Common        |             |             |             |             |          |             | 5,88   |
| 6,700,000     | Sloss-Sheffield S. & I., Pref. (7 %    |             |             | *****       | ******      |          | 19 -19/2    | 30     |
|               | Non-Cu.)                               |             |             |             | 651/2-66    |          | 43-77       | 90     |
| 20.000,000    | Tennessee Coal & Iron                  |             | 54%-55%     | 5514-5614   | 561/2-571/2 |          |             | 20     |
| 1.500,000     | Warwick Iron & Steel (par \$10)        |             | - 734       |             | - 8         |          |             | 29,59  |
| 1,000,000     | maining from a steel (par \$10)        |             | - 174       |             | . 9         |          | - 81/2      | 25     |

\*Par \$50. \*\* \$9 per share paid in. † 6% guaranteed by Beth. Steel Co. Late Philadelphia sales by telegraph. ‡ Ex-dividend.

\*Bonded indebtedness: Am. S. & W., \$130,656; Am. Tin.Plate, none; Am. Steel Hoop, none; Cambria Iron Co., \$2,000,000 6 % debenture

30-year bonds, 1917, payable option 5 years, assumed by Cambria Steel Co.; Federal Steel Co., \$9,832,000 Illinois 5 %, \$7.417,000 E. J. E. R. S. 5,

\$1,600,000 Johnson 6 %, \$6,732,000 D & I R. R. S. 5 %, \$1,000,000 2d D. & I. R. R. B. 6 %, \$10,000 land grant D. & I. R. R. S. 5; National Steel,

\$2,551,000 6 %; National Tube, none; Tennessee C., I. & R. R. Co., \$8,367,000 6 %, \$1,114,000 7 %, \$1.000,000 7 % cu. pref.; Pennsylvania Steel, \$1,000,000

5 %, Steelton. 1st, 1917. \$2,000,000 5 %; Sparrow's Point, 1st, 1922, \$4,000,000, consolidated, both plants; Bethlehem Iron, \$1.351,000 5 % maturing 1907.

Interest and principal guaranteed by Bethlehem Steel Co. Republic Iron & Steel, none; Warwick Iron & Steel, none; Colorado Fuel & Iron Co.

\$2,000,000 preferred stock with accumulated dividend of \$160,000 for year ending June 30, 1900. Sloss-Sheffleid St. & I. Co., Sloss I. & S. first mortgage 6 %, \$2,000,000, Sloss I. & S. general mortgage 4½ % \$1,835,000.

#### Iron and Industrial Stocks.

During the whole week under review the stock market has been strong, and steel securities generally showed an advancing tendency. To-day, as the result of the election, there were very heavy transactions in nearly every stock, with substantial advances all along the line.

| Bid.                                       | Asked. |
|--------------------------------------------|--------|
| American Bicycle Company, common 4         | 6      |
| American Bicycle Company, preferred 21     | 24     |
| American Bicycle Company, bonds            | 75     |
| E. W. Bliss, common                        | 1371/2 |
| E. W. Bliss, preferred125                  |        |
| Diamond State Steel 41/2                   | 434    |
| Empire Iron & Steel, common 4              | 10     |
| Empire Iron & Steel, preferred             | 48     |
| International Silver, common 4             | 434    |
| International Pump, common                 | 241/2  |
| International Pump, preferred              | 72     |
| National Enam. & St., common               | 24     |
| National Enam. & St., preferred            | 81     |
| New Haven 4                                | 27     |
| Otis Elevator, common                      | 27     |
| Otis Elevator, preferred                   | 88     |
| Tidewater Steel 7%                         | 8      |
| U. S. Cast Iron Pipe Company, common 4     | 41/2   |
| C. S. Cast Iron Pipe Company, preferred 30 | 32     |
| U. S. Projectile                           |        |
| Va. C. I. & C., stock 5                    | 8      |
| Va. C. I. & C., bonds 32                   | 37     |
| H. R. Worthington, preferred               | 110    |
|                                            |        |

Dividends.-The Shelby Steel Tube Company of Cleveland, Ohio, have declared a quarterly dividend of 1% per on their preferred stock.

The American Radiator Company of Chicago have de-clared the regular quarterly dividend of 1% per cent. on their preferred stock, payable November 15. Books will be closed from November 10 to 15, both inclusive.

The Standard Oil Dividend.—Standard Oil directors have declared a dividend of \$10 per share, payable December 15, making \$48 per share so far this year and \$75 per share since the organization of the present New Jersey company in June, 1899. In the early part of that year 6 per cent, was paid on the old Standard Oil trust certificates, so that the Standard Oil dividends in the last two calendar years have aggregated 81 per cent. The first sale of the stock to-day was made at 650, an advance of 25 points over the highest price reached on Monday. When only 10 per cent. in dividends was anmounced stock was sold in successive lots at 645, at 639, at 630, at 625, at 620 and at 610. The dividend is payable on \$97,500,000 outstanding stock, although the authorized capital of the present company is \$100,000,000. The divi-

dend, therefore, calls for \$9,750,000. Including this payment, the Standard Oil Company have disbursed to their shareholders since June, 1899, in dividends \$73,125,000. This year's Standard Oil dividends will be much the highest ever paid by the company. The 48 per cent. alhighest ever paid by the company. The 48 per cent. already declared calls for \$46,800,000. Previously, the highest annual rate was 33 per cent., this amount having been declared both in 1899 and in 1897. In 1898 the payment was 30 per cent., and in 1896, when the heavy increases in the quarterly rate began, 31 per cent. was distributed. This makes the Standard Oil dividends in five years reach the total, unprecedented for any other extensive corporation, of 175 per cent. This means that within this period \$170,625,000 has been distributed in dividends to Standard Oil share or certificate holders.

One of the most notable speeches of the week was delivered by Sir Robert Giffen, the noted statistician and former president of the Statistical Society, before the Manchester Statistical Society, upon the European population of the world. He declared the growth of the United States compelled her recognition as the most powerful State in the world, so far as population and resources were concerned. He pointed out that the United States really had a greater European population than any European State, for Great Britain's strength might be considered to be diminished rather than increased by the possession of large territories, while the points of the Pussion population were as interior than creased by the possession of large territories, while the units of the Russian population were so inferior that the pre-eminence of the United States is not questioned. According to Sir Robert, there are now only four great world Powers, the United States, Great Britain, Russia and Germany, with France a doubtful fifth. He expressed the belief that the "yellow peril" would vanish, as the yellow races were quickly being outnumbered by the Europeans, which in another century should number nearly 2,000,000,000. nearly 2,000,000,000.

Consul Marshal Halstead writes from Birmingham, October 18, 1900, that he is in receipt of a communica-tion from a steel manufacturing company, which contains an inquiry for American open hearth or Bessemer steel for making forks (hay, digging, coke, &c.), and requests the names of firms manufacturing high carbon steel of this sort.

The Pennsylvania Railroad Company have placed an order with the Pressed Steel Car Company for 2000 cars, to cost \$2,000,000. It is said that the Pennsylvania Railroad Company placed another order for 1000 cars, but the latter is not confirmed by the manufacturers.

# The New York Machinery Market.

Office of The Iron Age, 232-238 William street, New York, November 7, 1900.

With the announcement of the result of the election to-day comes the opportunity for a large number of consumers to "make good" numerous promises, and to break the bands which held back new enterprises and extensions to existing works. The number of projects which were held in abeyance, contingent on the outcome of the political contest, is well known to the trade. If half of them are put into motion and turned into the market there will be sufficient business to start a fair movement of activity. Of course, it cannot be expected that all of the papers held back will be signed this week and the market glutted with orders, but the time which has long been awaited with considerable anxiety has arrived, and it is now up to the men who waited.

Naturally, the week under review, the first week of this month, has been an extremely quiet one. In fact, every one was on the anxious seat, and transactions were of the smallest nature, involving only absolute necessities. Prices as a rule remained unchanged, but we hear a rumor of one large concern, who are said to have lowered their export prices. Another report has it that they have also lowered their domestic prices.

An illustration of what local sentiment is doing in the way of influencing purchasing for public work in England has just come to our notice. Specifications and plans are being drawn up by James Mansergh, 5 Victoria street, London, for a large pumping station, which is to be purchased by the municipality of Melbourne, Australia. A firm in this city wished to bid on the pumping engines, and wrote to Mr. Mansergh for a copy of the specifications and proposal blanks. In reply the following was received:

"Invitations have been sent out to several makers for the machinery required, and tenders are to be in shortly. There are certain inconveniences in having the work done out of England, and therefore I cannot accept a price from you for this work."

It is reported that plans are being prepared by the United States engineers, at Manila, P. I., for the improvement of the water supply of that city. Local engineers estimate that the cost of the improvements will reach \$1,000,000.

We are informed that all of the bids received on October 22 for furnishing two compound high duty pumping engines for the pumping station at Pittsburgh, Pa., have been rejected.

The John A. Meade Mfg. Company of 11 Broadway were awarded the contract for the coal and ashes handling machinery and coal crusher which are to be installed in the building of the Bureau of Engraving and Printing, Washington, D. C.

A short time ago we referred to the plans of Hoopes & Townsend of Philadelphia, which looked toward the building of a bar mill. We are now informed that the contract for the building has been let. The American Bridge Company have secured the order. The building will be  $500 \times 70$  feet.

New car shops are being built at Middletown, N. Y., by the New York, Ontario & Western Railroad. The contract for the heating apparatus has been awarded to the American Blower Company of 141 Broadway and Detroit, Mich. The American Blower Company also received a contract for the heating of the new Philadelphia shops of the Chicago Pneumatic Tool Company.

We understand that operations are under way for the erection of a large paper mill at Franklin, Pa. The plant will be built by the General Manifold Company, who will manufacture a manifold paper requiring no carbon sheet. Geo. Miller of Franklin, Pa., is said to be interested in the company.

The American Blower Company have received from

the International Paper Company an order for a 1000 horse-power forced draft plant which is to be installed in the latter company's plant at Corinth, N. Y.

J. F. Ahrends, secretary of the De Laval Separating Company, Poughkeepsie, N. Y., is said to be interested in a new company who are to build a plant at Trenton, N. J., for the manufacture of turbine water wheels.

The Standard Pneumatic Tool Company, whose New York offices are in charge of G. A. Barden at 141 Broadway, have just received an order from the Navy Department for 20 pneumatic hammers and eight drills. They will be operated at the Brooklyn Navy Yard.

The Buffalo Forge Company of 39-41 Cortlandt street have received an order for a complete lumber drying outfit from Hammacher, Delius & Co. of this city. The apparatus is to be shipped to Hamburg, Germany.

Catalogues Wanted.—Prof. A. Mitinsky, director of the newly organized Mechanical Laboratory of the Mining Academy of Empress Catherine II, St. Petersburg, Russia, advises us that he desires to receive catalogues and other printed matter relating to the lines of its work.

## A Hardware Float.

The float shown in the accompanying cut was used by Norwood & Field of Bellows Falls, Vt., in a Fourth of July parade. The float was 8 x 12 feet in size. The roof was used for advertising roofing, a different kind on each side. The sides of the float were divided into four



A Hardware Float,

sections, two on each side, each trimmed with different kinds of goods. The section nearest the front, on the side of the float shown in the illustration, contained a six-pointed star outlined with butts of various kinds and sizes. On the interior space were Knobs, Locks, Cupboard Catches, Drawer Pulls and other house trimmings. The other section on the same side represented a maltese cross, made up of Brushes, each of which was different in style and size. On the other side of the float one of the sections represented a wheel made up of Hammers, no two of which were alike. The other section was tastefully arranged with Hand and Cross Cut Saws. The back of the float was taken up with a large Bicycle poster, the whole affair being trimmed with yellow, red, white and blue bunting. The horses drawing the float were covered with blankets advertising the brand of Paints handled by the firm.

The float was designed and arranged by A. L. Field, and cost something over \$40, exclusive of the labor and the value of the articles used in carrying out the plan.

1107

milit

1112

ont

Wir

the

neal

Har

Pri

IS II

val

dra

plo;

deg

tur

1'111

ing

shi

are

the

in

ta

# HARDWARE.

# Dissolution of the Continental Company.

A significant event to which reference is made in another column is the decision of the Continental Company to wind up their affairs, leaving the factories which acted through them free to sell their products as formerly. This company were organized, it will be remembered, as the selling agency for several of the leading manufacturers of Window Screens, Door Screens and related goods. In this way the competition between themselves was regulated and the market in a good measure controlled, owing to the representative position occupied by the houses identified with the company. There were, however, a number of manufacturers in the open market, and while the operations of the Continental Company were characterized by moderation and no extreme advances in prices were attempted, the experiment was not attended with sufficient success to justify the continuance of the arrangement for another year. The manufacturers are apparently convinced that their interests will be best served by the independent marketing of their products. The agency system which was attempted is said not to have resulted in the economies which were anticipated, and the higher prices which were announced for their goods tended to build up competition which might result in a serious overproduction and demoralized prices. The disfavor with which combinations and pools are regarded by the trade was doubtless also something of an obstacle to the success of the plan, even though it did not properly come under either of these designations. The Continental Company, notwithstanding their short existence, are to be congratulated on the conservatism of their methods, the excellent feeling which has prevailed among their members, and the promptness with which a change of policy has been decided upon before serious harm has been done in the building up of new competition.

## Classified Lists of Buyers.

The abandonment by the Wire Goods Association of the classification of Hardware houses according to their size and position in the trade is a significant reminder of the difficulties which attend such schemes. Thus to divide the trade into classes A, B and C, suggesting the great big bears, the middle sized bears and the little wee wee bears, may appear plausible and attractive when the matter is viewed theoretically. The difficulties of carrying it out are, however, in the long run usually insurmountable, and the complicated structure gradually develops weaknesses which interfere with its working, and, like the one-horse shay, it suddenly goes to pieces. There are combinations still using similar lists and the trade are naturally suspicious that something may happen before long.

# The Meeting of the National Hardware Association.

The coming meeting of the National Hardware Association at Richmond is an event of recognized importance to the trade as a whole. This association is exceedingly influential, on account of the fact that it brings together most of the large jobbing houses in an organization which has for several years been working very successfully for the protection and promotion of jobbing interests. The indications are that the gathering will be largely attended. Besides the membership, which includes nearly 200 houses, many manufacturers will probably be present to avail themselves of the opportunity of meeting their customers and friends in the trade.

It is to be hoped that the association will be guided by prudent counsel, and that there may be due recognition of the rights and interests of both the manufacturers and the retailers.

# Department Stores and Catalogue Houses.

One of the results of organization among the retail Hardware trade is an earnest consideration of means which can be adopted to prevent department stores and catalogue houses from invading the Hardware field. On another page will be found a reference to the matter as regarded from the point of view of the Interstate Retail Hardware Dealers' Association, who call attention to the necessity of concerted action by the merchants to meet or prevent this troublesome competition. The subject is of great practical importance to merchants, both wholesale and retail, as the question is one which bears on the interests of both classes of the trade. This is one of the questions which will receive consideration at the approaching meeting of the National Hardware Association. While it is probably true that in many cases goods are obtained by department stores and catalogue houses from the jobbers, the whole system is undoubtedly opposed to the interests of the jobbers, and they will have the sympathy of the trade at large in any efforts they may make to have goods marketed through the regular channels. In this connection the article relating to the position and work of the Interstate Association will be of interest. The view there expressed that "either the jobber or the retailer must go" if this kind of competition continues and extends, brings up in striking form some of the bearings of the question.

# The Trade Outlook.

# The Prospect for Business.

The Presidential canvass which has just closed is notable for the comparatively little interruption of business which resulted from the engrossment of the public mind in political matters. The course of trade continued without nearly as serious disturbance as is usually the case in Presidential years. Notwithstanding this fact there is reason to anticipate an enlargement of enterprise and an increased volume of business, in view of the removal of any element of uncertainty which may have existed, and the renewed attention which will be given to commercial affairs. Many enterprises have doubtless been held in abeyance, and a policy of caution has characterized the transactions of the past few months. That the prosperity which so generally prevailed will continue with a still larger volume of business may reasonably be expected.

# Tone of the Hardware Market.

It is regarded as significant by many that in certain lines prices are firmer than a few weeks ago, and some actual advances have taken place. This is true in most part in goods which lie near the raw material, on which there has been a decided reaction from the high prices of last year. There is also a hopeful feeling in regard to the course of future business, and it is anticipated that there will be before long a fairly liberal placing of orders for spring delivery. While the trade are inclined to look with question upon some lines which advanced freely and have not yet receded, there are many goods which in the judgment of prudent buyers are a safe purchase. The prosperous condition of the country and the enlarging foreign business are features of the situation which tend to give steadiness to values and make the outlook for business promising.

# Special Reports.

Chicago.

(By Telegraph.)

Hardware has continued in very active demand, alhough a falling off would not have been surprising in new of the nearness of election day and the increasing political excitement. Greater confidence is being shown in the future and contracts with manufacturers are being placed by jobbers on a rather extensive scale. The contracts are specially notable for staple goods, such as Wire Nails, Galvanized Sheets, &c. It is expected that the building trade will show much greater activity in the near future and that the demand for Hardware will therefore show a decided increase. Seldom have the Hardware interests taken a brighter view of the future. Prices have been quite steady for some time, and the opinion is strongly prevalent that any change to be made is more likely to be in the direction of higher than lower values. The demand for Heavy Hardware is fully as good as for Shelf Hardware, the manufacturing interests drawing their supplies from the jobbers being well employed. Collections are extremely good, indicating a high degree of prosperity throughout this territory. Manufacturers report October the biggest month of the year, even running ahead of some months of the great boom period. Jobbers are buying much more freely, some of them having placed very large contracts. Specifications for quick shipments are keeping the factories busy. It is expected that November will be still more active, as no indications are yet seen of anything calculated to cause a falling off

#### St. Louis.

The rather astonishing business of October extends practically unabated into November. It is contended that the volume of business clearly indicates the limited stocks In dealers' hands. The quantity of orders is very large this week, and assembling quarters have been severely taxed for the quick handling of customers' wants. Extensive purchases have not yet been made of any particular item, the retail trade buying as a general thing to keep up with current sales. The large buyers seem to expect advances, especially on goods nearest raw material. The Heavy Hardware trade had an advance last week on Plates, and this week brings notice of higher prices from some independent Bar mills who have heretofore quoted under the market. Carriage Bolts are not shipped by makers with the promptness desired by jobhers and some embarrassment is resulting.

# Notes on Prices.

Wire Nails.—There appears to be a somewhat larger demand upon the manufacturers for Wire Nails, and the indications are that stocks are light and business fairly active. Orders are usually for small lots and immediate shipment. Quotations are as follows, f.o.b. Pittsburgh, terms 60 days, or 2 per cent. discount for cash in 10 days: To jobbers in carload lots.....\$2.20

| To jobbers in carload lots              | <br>    |     |   |     |  |   | ٠ | 0 | .\$2.20 |
|-----------------------------------------|---------|-----|---|-----|--|---|---|---|---------|
| To jobbers in less than carload lots.   |         |     |   |     |  |   |   |   |         |
| To retailers in carload lots            | <br>0 0 |     | 0 |     |  | 0 | 0 | 0 | . 2.30  |
| To retailers in less than carload lots. | <br>    | 0 1 | 0 | 0 0 |  | 0 | 0 | 0 | . 2.40  |

St. Louis.—What is spoken of as a "splendid run of orders," is reaching jobbers and producers this week. The capacity of mills is apparently taxed, as shipments are being made rather slowly. Price in carloads to retailers is \$2.40, base; smaller lots, \$2.45, base.

Pittsburgh.-An official of the American Steel & Wire

Company reports a very active demand for all their products, Wire Nails included. Buying is mostly in small lots, and for prompt shipment. Stocks of Wire Nails all over the country are very light. We quote, f.o.b. Pittsburgh, terms 60 days, or 2 per cent. discount for cash in 10 days:

| To jobbers in carload lots             | \$2.20 |
|----------------------------------------|--------|
| To jobbers in less than carload lots   | 2.25   |
| To retailers in carload lots           | 2.30   |
| To retailers in less than carload lots | 2.40   |

Cut Nails.—The movement of Cut Nails is of fair proportions, with a firm market. Quotations are as follows. f.o.b. Pittsburgh, terms 60 days, 2 per cent. off in 10 days:

| Carload  | lots.  |       |       |          |         | <br> | <br> | .\$1.95 |
|----------|--------|-------|-------|----------|---------|------|------|---------|
| To jobb  | ers in | less  | than  | carload  | lots    | <br> | <br> | .2.00   |
| To retai | lers i | n les | s tha | n carloa | d lots. | <br> | <br> | . 2.10  |

New York.—The local market shows no change in demand or prices. The requirements of customers call for prompt shipments. Prices are as follows:

| To jobbers in carload lots on dock\$2.1            | 3 |
|----------------------------------------------------|---|
| To jobbers in less than carload lots on dock 2.1   | 8 |
| To retailers in less than carload lots on dock 2.3 | 1 |
| Small lots from store                              | 5 |

Chicago, by Telegraph.—A remarkably good demand continues for Cut Nails, with prices maintained at \$2.25 for small lots from stock.

St. Louis.—The larger sizes of Cut Nails are in good movement and sales are in good proportion to Wire Nails. Jobbers' price out of stock is \$2.30 to \$2.40, base.

Pittsburgh.—Demand is mostly for small lots and prompt shipment. It is stated that prices are being firmly held. We quote, f.o.b. Pittsburgh, terms 60 days, 2 per cent. off in 10 days, as follows: Carload lots, \$1.95; jobbers, less than carload lots, \$2.

Barb Wire.—The domestic demand for Barb Wire is light, but shows some improvement. Export business is good. Quotations for home trade are as follows, f.o.b. Pittsburgh, aet cash 60 days, or 2 per cent discount for cash in 10 days:

| To jobbers in carload lots, Painted\$2.50               |
|---------------------------------------------------------|
| To jobbers in carload lots, Galvanized 2.80             |
| To jobbers in less than carload lots, Painted 2.55      |
| To jobbers in less than carload lots, Galvanized 2.85   |
| To retailers in carload lots, Painted 2.60              |
| To retailers in carload lots, Galvanized 2.90           |
| To retailers in less than carload lots, Painted 2.70    |
| To retailers in less than carload lots, Galvanized 3.00 |
| Ellwood and Baker Wire is 5 cents and Washburn &        |

Ellwood and Baker Wire is 5 cents and Washburn & Moen Glidden 10 cents per 100 higher than the foregoing prices.

Chicago, by Telegraph.—The demand for shipment from factory is running so heavy that stocks are rapidly being reduced. This is remarkable at this time of the year. Jobbers also report a very good demand and believe that it will run later into the fall than usual. Prices are firm at \$2.70 for Painted and \$3 for Galvanized Wire from stock, with the usual reduction on carload lots.

St. Louis.—The demand coming to this market is still in strong force. As weather conditions are extremely favorable, farmers have had no set back whatever either in fall sowing or property renewals. Painted in carloads to retailers is \$2.70, smaller lots, \$2.75. Galvanized commands an advance of 30 cents on these prices.

Pittsburgh.—There is very little doing in domestic trade in Barb Wire, but orders for foreign shipment are large. We quote as follows: Galvanized Barb Wire, \$2.80, in carload lots to jobbers, and Painted, \$2.50. Terms, 60 days net, 2 per cent. discount for cash in 10 days, f.o.b. Pittsburgh.

**Plain Wire.**—Orders for Plain Wire are generally for small lots, with a moderate demand. Quotations are as follows, f.o.b. Pittsburgh, terms 60 days, or 2 per cent. off for cash in 10 days:

|    |             |         |        |         |       |      |     | Base  | sizes. |
|----|-------------|---------|--------|---------|-------|------|-----|-------|--------|
|    |             |         |        |         |       |      | P   | lain. | Galv.  |
| То | jobbers in  | n carl  | oad le | ots     |       | <br> | .\$ | 2.15  | \$2.55 |
| To | jobbers in  | n less  | than   | carload | lots. | <br> |     | 2.20  | 2.60   |
| To | retailers i | n carl  | load 1 | ots     |       | <br> |     | 2.25  | 2.65   |
| To | retailers i | in less | than   | carload | lots. | <br> |     | 2.35  | 2.75   |

No

In

10

w

th

qu

The above prices are for the base numbers, 6 to 9. The other numbers of Plain and Galvanized Wire take the advances indicated in the following table:

|         | H | 7   | a | in | ı   | 1   | en   | ice F  | Vire . | Ad  | vance | s (C | a  | ti  | ci | h   | 1   | W | re  | ż   | m) | hi | ts).   |        |
|---------|---|-----|---|----|-----|-----|------|--------|--------|-----|-------|------|----|-----|----|-----|-----|---|-----|-----|----|----|--------|--------|
| Nos.    |   |     |   |    |     |     |      |        |        |     |       |      |    |     |    |     |     |   |     | ,   | ,  |    | Galva  | nized. |
| 6 to 9. |   |     |   | 0  |     |     |      | Base   |        |     |       |      | ۰  | 0 1 |    |     |     |   | 0   |     |    |    | \$0.40 | extra. |
| 10      |   |     |   | 0  | 9 / |     |      | \$0.05 | adva   | nce | over  | base | 9. |     | 0  | 0 0 |     | 0 | 0 1 |     |    |    | .40    | 6.6    |
| 11      |   |     |   | 0  | 0   |     | 0    | .10    | 6.0    | 1   | 6.6   | 6.6  |    |     |    | 9 0 |     |   |     | 0 0 |    | 0  | .40    | 44     |
| 12 and  | 1 | 2   | 3 | 6  |     |     |      | .15    | 6.6    |     | 6.6   | 6.6  |    |     |    |     |     |   |     |     |    |    | .40    | 64     |
| 13      |   | 0 1 |   |    |     |     | <br> | .25    | 6.6    |     | 6.6   | 66   |    | 0   | 0  | 0 0 |     |   | 9 0 |     |    | 0  | .40    | 6.6    |
| 14      |   |     |   |    |     |     |      | .35    | 4.6    |     | 66    | 66   |    |     |    |     |     |   |     |     |    |    | .40    | 6.6    |
| 15      |   |     |   |    |     | 0 1 |      | .45    | 8.6    |     | 66    | 6.6  |    | 0   |    | 0 0 | . 0 |   | 0 ( |     |    |    | .75    | 44     |
| 16      |   |     |   |    |     |     |      |        | 6.6    |     | 6.6   | 4.6  |    |     |    |     |     |   |     |     |    |    | .75    | 6.6    |
| 17      |   |     |   |    |     |     |      |        | 8.8    |     | 64    | 44   |    |     |    |     |     |   |     |     |    |    | 1.00   | 41     |
| 18      |   |     |   | 0  | 0 1 |     |      | .85    | 14     |     | 6.6   | 6.6  | •  |     |    |     |     |   |     |     |    |    | 1.00   | 66     |

For even weight bundles, 50 pounds and over, 5 cents per bundle advance on above.

Chicago, by Telegraph.—The volume of business keeps up to its recent proportions. Manufacturers and jobbers alike report a very satisfactory movement; small lots, Chicago delivery, are quoted at \$2.35, base.

Pittsburgh.—There is a good demand, but mostly for small lots. We quote:

|                                                   | Plain.   |
|---------------------------------------------------|----------|
| To jobbers in carload lots                        | \$2.15   |
| To jobbers in less than carload lots              | 2.20     |
| To retailers in carload lots                      | 2.25     |
| To retailers in less than carload lots            | 2.35     |
| Galvanized Wire up to No. 14 is 40 cents adva-    | nce on   |
| Plain, Nos. 15 and 16, 75 cents advance, and Nos. | 17 and   |
| 18, \$1 advance. Terms are 60 days net, with 2 pe | er cent. |
| discount allowed for cash if paid in 10 days fro  | m date   |
| of invoice.                                       |          |
|                                                   |          |

Window Screens, Door Screens, &c.—The Continental Company, Detroit, Mich., who were organized last year for the marketing of Window Screens, Door Screens, &c., have decided to wind up their affairs, and their factories will hereafter sell their products independently, as formerly. The manufacturers who operated through the Continental Company as their sales agents were the following:

Owosso Mfg. Company, Owosso, Mich.
Wabash Screen Door Company, Rhinelander, Wis.
The A. J. Phillips Company, Fenton, Mich.
The Porter Screen Door Mfg. Company, Burlington, Vt.
Owosso Mfg. Company, Perla, Ark.
Buchanan Screen Works, Hillsdale, Mich.

Cortland Door & Window Screen Co., Cortland, N. Y. With these manufacturers the Continental Company made a contract for the sale of their products for one year, and in view of all the circumstances it has not been deemed advisable to make a renewal of the arrangement for the coming year. There were a number of manufacturers in the open market who disposed of their goods direct to the trade, and while the element of competition was diminished on account of the unifying of the interests of a number of the prominent manufacturers through this method of marketing their goods, there was sufficient competition for business to prevent the market from being under the control of the associated manufacturers. As the result of the organization of the company somewhat higher prices were developed, and the tendency in this direction was facilitated by the high prices which prevailed for Wire Cloth. As a result of having the market an entirely open one it is probable that the coming season will witness somewhat lower prices, and the prospect that Wire Cloth will be materially lower than last year will also tend to reduce somewhat the price of Screen Goods. The manufacturers, however, emphasize the point that no excessive advance was made in the prices of the goods, the manufacturers having only a fair margin of profit. The relations between the manufacturers are referred to as very pleasant, and unreasonably severe competition is not anticipated. The regular standard list of Door and Window Screens and the advances made for extras during the past season will be maintained during the coming season.

Wire Cloth.—The manufacturers of Wire Cloth held the auticipated conference in regard to prices for the coming season, but no definite agreement was reached in regard to prices. The market, therefore, is an open one. While the nominal price to the small trade may be regarded as \$1.25, careful buyers in fair quantities can

probably readily obtain \$1.10. The transactions have not yet been of sufficient volume to determine the market definitely, and it remains to be seen what its course will be. Some of the manufacturers have not as yet made public announcement of their policy or prices.

Poultry Netting.—At a meeting of the manufacturers of Poultry Netting action was taken in regard to prices for the coming season, and the market is in a fairly satisfactory condition. Current prices to buyers of fair quantities are represented by the discount of 80 and 20 per cent. The indications are that there will be a large volume of business, and the manufacturers are anticipating an early placing of stock orders.

Asbestos.—Asbestos products have been advanced 15 to 20 per cent., partly owing to an increased demand for the commodity in its many forms, and partially on account of a fire which crippled one of the principal sources of supply. Some of the mines which have been shut down for years because they were not on a paying basis have been reopened, and the shortage is not expected to continue much longer.

**Lead Pipe.**—A reduction of ¼ cent per pound in Lead Pipe is announced under date November 1.

Cordage.—The Rope market has stiffened as a result of advancing prices of fiber. Manufacturers generally quote Sisal Rope, on a basis of 7-16 inch and larger, at 6½ cents, and Manila Rope, on the same basis, at 9½ cents, as minimum prices. Manufacturers express themselves as expecting further advances. These may be but temporary, especially for Manila Rope.

Glass.—The American Window Glass Company report that all of their factories are now in operation, with a generally steady increase in force, and that the total amount of Glass cut and boxed is close to the average under most favorable conditions. It is reported that a good share of the independent factory's Glass has been and will be bought by members of the National Jobbers' Association. Discounts for small lots from the jobbers' list of September 1, which are uniform over the entire country, are as follows:

Paints and Colors.—Leads.—The market for White Lead in Oil shows no change. Consumption is up to expectations for the season, taking into account the high price of Linseed Oil. Quotations are as follows: In lots of 500 pounds and over, 6½ cents; in lots of less than 500 pounds, 7 cents per pound. The advance in the price of standard grades of liquid paints recently anounced is said to be from \$1.15 to \$1.25 per gallon, while the increase in the price of colors in Oil is referred to as equivalent to a 10 per cent. advance all around.

Oils.—Linsced Oil.—The future market for Linseed Oil remains unsettled, but is slightly stronger, owing to the advancing tendency of Flax Seed. Considerable speculative buying is being indulged in, deliveries extending to April and May, 1901, for carload lots. Recent orders of this character have been placed at 68 to 70 cents. No options, however, are given. Future Oil follows the fluctuations in the price of Seed, to a greater or less extent. Local demand is confined to small lots, at unchanged quotations, as follows: City Raw in lots five barrels or more, 75 cents; in lots of less than five barrels, 76 cents. State and Western brands are held at about 73 cents. Boiled Oil is 2 cents per gallon advance on Raw.

Spirits Turpentine.—The market for Turpentine has been quiet, with a tendency toward weakness. Inquiries are light, consumers of large lots holding off. Buying is confined to small lots. During the week under review prices have declined, quotations at present being 43 to 43½ cents for Southerns and 43½ to 44 cents for machine made barrels.

# Inter-State Retail Hardware Dealers' Association.

HIS association, of which Fred. H. Cozzens is the efficient secretary, has issued an attractive pamphlet containing its constitution and by-laws, together with other matter explaining the scope of its operations, and referring especially to the reforms which it seeks to accomplish. The following extracts from it, some of which are attractively presented in a striking form on the cover, will be of interest, touching as they do upon questions in which Hardware merchants in all parts of the country are concerned:

# Some Chings to 32 32 Je Chink About.

THE catalogue house and department store is a new, serious and extremely oppressive competitor, which if unchecked threatens the very life of the retail hardware dealer. It is growing with the malignancy of a cancer. To-day many catalogue houses are offering some staple goods to your customers for less than you can buy of your jobber.

Alone and single handed you are absolutely helpless to combat this great competition. Even State organization alone can accomplish little, but a union of several States acting as one man is a power which no manufacturer or jobber can ignore. That is what the Inter-State Association

"Think on these things."

# Some Phrases from e Literature

which illustrate the possibilities

of

# The Inter-State Retail Hardware Dealers' Association.

"In union is strength."

"United we stand; Divided we fall."

"Organization is the keynote to success in modern commercialism."

"One soldier alone cannot fight much of a battle; a company is infinitely more serviceable; a regiment can overrun an ordinary city; a brigade a county, a division a State, and a corps or several of them a nation."

THE INTER-STATE HARDWARE DEAL-ERS' Association can be made a brigade, a division or corps as the retailers of the land elect. Which will it be?

A single thread will sustain but a trifling weight; that's the individual A hundred or two threads, properly interwoven, will sustain a very heavy weight, but the breaking point is quickly reached when we begin to pile on the load. That's the State Associa-

A dozen or fifteen of these strong

cords twisted into one mighty rope is capable of sustaining practically limitless weight. That's the Inter-State Association. Are you one of the threads? If not join your STATE ORGANIZATION at once, strengthening that cord just so much, and in turn strengthening the Inter-State.

"Think on these things."



# & BEAR IN MIND &

TODAY

the retailer still markets from 75 to 90 per cent. of the leading hardware staples.

A DECADE AGO

he distributed from 90 to 95 per cent. of these same goods.

A DECADE HENCE

with present methods he will sell only from 60 to 75 of these same goods. Who will sell the balance? The Catalogue Houses and Department Stores. will the business come from aside from the natural growth? From the business of the Retail Hardware Dealers.

Are you satisfied to let this continue? If not join the Inter-State through your State Association.

Assist us in changing these conditions before it is too late, as it unquestionably will be before many years.

#### Appeal for Members.

An earnest appeal is made by the association to merchants who are not identified with State organizations,

If you are not a member of your own State Organiza-TION send your name at once to Your State Secretary for an application blank, as you can only become a member of the Inter-State by joining your STATE ORGANIZATION.

The names and addresses of the secretaries of the States affiliated with the Inter-State are as follows:

MICHIGAN, Fred. H. Cozzens, Detroit, Mich.

KANSAS, J. A. Cole, Topeka, Kan. NORTH DAKOTA,

C. N. Barnes, Grand Forks, N. D. INDIANA,
M. L. Corey, Argos, Ind.

ILLINOIS,

Lewis M. Reeves, Peoria, Ill.

IOWA. C. W. Brelsford, Villisca, Iowa. E. Thomas, Trenton, Mo.

# Catalogue House Competition.

It will thus be seen that the association is giving special attention to the troublesome subject of catalogue house competition. A recent issue of Trade gives some interesting figures as to the prices at which some leading goods are sold by catalogue houses, and shows the meager profits which the retailer would have in meeting this competition. The necessity for organized action on the part of the retailers is thus emphasized:

It requires no great stretch of the imagination to see that either the jobber or the retailer must go, and go much sooner than most people recognize, if the present condition of affairs is to continue. The catalogue house is a splendid example of up to date cash sale, quantity purchasing business and has simply cut out one of the profits between production and consumption.

It is here to stay, and the sooner jobbers and retailers realize this the easier it will be for them to adjust their business to meet this nineteenth century competition,

No

bus

COL

col

 $e_{X}$ 

which, like a snowball, the bigger it grows the faster it grows. It is already evident that no retailer can do business on these margins even if he gets cash in advance with every sale. What then is the secret of the catalogue concerns' ability to undersell even the jobber in some instances? Is it some new panacea for mercantile ills which these shrewd concerns have discovered, and which they monopolize? Assuredly not, but is simply the result of keen, discriminating, quantity buying for cash, which gives the buyer, if he is "on to his job," the short price every time, and the cutting out of one profit in the distribution of merchandise.

in the distribution of merchandise.

The remedy for this condition is, in our judgment, extremely simple. There are in the United States probably 22,000 retail dealers in Hardware. Let us suppose that each of these dealers handles, roughly speaking, in the vicinity of \$40 worth of these principal staples each year. This, of course, is far from correct, for the quantity varies greatly in different localities, and the total shown by these figures would considerably exceed the total output of some factories, but for illustration and in the absence of more definite statistics it must suffice. The retail Hardware trade in the United States is probably still marketing from 75 to 90 per cent. of the principal Hardware staples, while the catalogue house disposes of from 10 to 25 per cent.

Twenty-five years ago the figures were probably, dealer 90 to 98 per cent., mail order houses 2 to 10 per cent. Another decade hence the figures will surely be much nearer half and half than those existing to-day. Every dollar of this money in catalogue house business is at the expense of the retailer.

at the expense of the retailer.

The remedy, based upon the above estimates of the relative value of the retail trade as compared to that of the catalogue house and department store, which, while purely imaginative, is sufficiently correct to show that the power to remedy this great and growing menace to the business of the retailer, still rests with him. That power, which he cannot exercise individually, but which must be exerted through the medium of association with his fellow merchants, is the ability to say to the manufacturer: "You cannot and must not sell the catalogue houses and department stores which are steadily undermining my business, and at the same time sell me!" Nearly every State has its State organization of Hardware dealers, of grocers and of those in other lines. The grocers and Hardwaremen possess national, organizations. If one-fourth of the dealers in these lines in the various States were members of a State association were merged and welded into a compact whole by affiliation, the remedy could be applied at once; and indeed the day when this can be done effectively is rapidly approaching, for the need of efficient organization is growing apace, and slowly but surely the strength of the Inter-State Retail Hardware Dealers' Association, the National Association of Retail Grocers and the National Association of Retail Grocers and the National Association of Retail Grocers and the National Association of Retail Druggists is developing.

Already some of these organizations have taken decisive action and gained important concessions from manufacturers.

Others have in contemplation equally important action which will culminate in the near future. If these efforts are to succeed they must have the united and unanimous support of the retail merchants in the lines affected.

If these efforts fail, either the jobber or the retailer must go. Which will it be?

# New England Hardware Dealers' Association.

The regular monthly meeting of the New England Hardware Dealers' Association will be held at the United States Hotel, Boston, on the evening of the 14th inst. The speaker of the evening will be Robert Luce of Somerville, Mass., who will take for his topic "Taxation Problems." The subject of newspaper advertising will also come up for attention and the methods pursued by the members will be discussed. During the evening Robert L. Van Buskirk, accompanied by Miss Madge Parks, will favor the company with some choice vocal selections. The Entertainment Committee having charge of the meeting consists of Calvin M. Nichols, Dorchester, Mass.; William E. Whitney, Somerville, and Chas. H. Stevens, Arlington.

King & Eddy, Hardware merchants, Moscow, N. Y., whose store was destroyed by fire in June last, expect to occupy their new building, now in course of erection, on December 1.

# Export Business.

FROM A LONDON CORRESPONDENT.

# Trade Bias.

A N interesting circular letter has been sent out by a mining engineer, a metallurgist, who is bitterly incensed at the influence which Americans possess in all the mining centers of South Africa. It is a suggestive document as indicating the growing influence of the American metal worker, whether in heavy or light goods, in South Africa, I quote a few sentences and American exporters will draw their own deductions:

Allow me to call the attention of English merchants and manufacturers to the great demand there will be for merchandise of nearly every kind in South Africa after this war is finished, and to suggest their sending out good pushing representatives to endeavor to obtain a good proportion of this trade for England. At the present moment German firms do a large and lucrative business as importers of general merchandise at the ports, while Americans have a very strong hold on the machinery, Hardware, and, in fact, all mining requisites in the mining districts. Their influence on these particular branches of trade through so many of them occupying the positions of managers and engineers of large English gold mines on the Rand before this Boer war commenced was enormous, and, as they are very clannish, it is extremely difficult for English manufacturers of this class of goods to obtain even a footing. I will explain how these Americans work together: When an American firm sell machinery to a mining company they recommend Americans to erect it, and these are often appointed to run it. These American nominees, thus placed in responsible positions, from clannishness, also employ Americans under them, and, of course, take particular care that all orders for machinery, &c., are sent to the American firm by whom they were recommended, and thus English firms suffer and Americans (with their not overpowering sense of modesty) are kept unduly to the fore. The American element through such means was so strong in the Transvaal before the war commenced that it is the duty of every Englishman to do everything in his power to prevent it again attaining such excessive preponderance.

While this may not be particularly pleasing to English readers, I suppose American manufacturers and exporters will not be sorry to hear that they are doing so well. There can be no doubt that American goods are in increasing demand in South Africa, and that there is an excellent opening for many lines of Hardware as well as the heavier products.

# How Not To Do It.

In my last letter I referred to the case of an American firm who have been spreading broadcast a letter offering to supply electrical apparatus at exceptional prices. I pointed out the futility of this method of business, remarking that English importers do not feel inclined to handle American goods unless they are pretty certain that the man round the corner is not having his "cut in" on precisely the same article. A well-known house recently received samples and what appeared to be special terms from an American manufacturer. The head of the house remarked:

I should like to have handled these goods, but I find that all our competitors have them too. And our competitors know that we have them. The result is that no trade will be done, although the goods are salable.

This is another example of the same kind of feckless trading that not only does so much harm to the manufacturers themselves, but to American trade in general. Merchants and agents over here who handle American goods lose patience with this happy-go-easy sort of thing, and the result is that when a good man comes along who knows his business he has to start in and break down a certain amount of prejudice which ought not to exist.

# They Won't Pay.

The agent in question said that the number of Americans who are bombarding him with applications to take up their goods is larger than one would imagine; but he

These Americans want us to do a lot of things for them for nothing. They will do nearly everything for us except pay. It is not that they have not got the money, because they have, but they simply do not trust us. Now what earthly use is there in their trying to do business with us at all unless they can trust us, and if we have their confidence why should they be afraid to consider terms for pushing their business? Here is an article which sells fairly well among ironmongers, but the American maker in question is constantly growling at us because we do not sell more. We felt under some obligations to this manufacturer, having promised that we would push the article for all we were worth. Accordingly a few weeks ago we put a special traveler on; sent him round the coast at a cost of not less than \$60 a week. The sale of the article did not pay the traveler's expenses by a long chalk. The American manufacturer gets his orders, such as they are, while we are heavy losers. We won't do that sort of thing again. If we are worth while nagotiating with, and the article is new on the market, the American maker must pay something toward the cost of the selling. We are not merchants, we are agents.

# Requests for Catalogues, &c.

R. LANG & CO. have purchased the business of S. L. Mayers, Hillsboro, Texas, dealers in Shelf and Heavy Hardware, Tinware, Harness, &c. The new proprietors advise us that they would be pleased if manufacturers and jobbers would send them catalogues and price-lists relating to the above lines.

Sledge & Barkley of Lawrenceville, Va., dealers in Hardware, Vehicles, Harness, &c., have recently completed a basement under their brick block which gives them additional floor space of about 2500 square feet. In this they will carry Cut and Wire Nails, Tarred and Metal Roofings, Barbed Wire and other Heavy Hardware. They advise us that they will buy in carload quantities, and would be glad to have manufacturers furnish quotations.

Hudson Bros. & Co., dealers in Carriages, Wagons, Bicycles, Stoves, Agricultural Machinery, &c., Ellisburg, N. Y., are about to start a Hardware and Tinware store in connection with their other business, and will value catalogues, quotations, &c., from the trade.

# Hardware Club of New York.

THE announcement is made by the House Committee of the Hardware Club that the repairs to the building in consequence of the recent fire have been somewhat delayed, but temporary repairs to the kitchen and serving room have been made and the club was reopened on Wednesday, November 7. The restaurant, while not in complete order, will be open from 8 a.m. to 4 p.m.

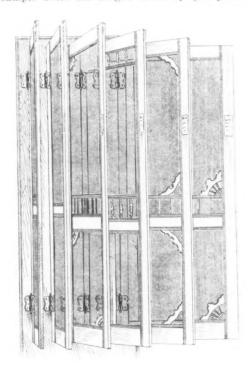
# Morley Bros.' New Catalogue.

MORLEY BROS., Saginaw, Mich., have just issued a large edition of a General Hardware catalogue containing 1274 pages, each 12½ x 9½ inches, leather bound in stiff covers. The frontispiece gives illustrations of their main establishment, their factory, their repository and their Iron, Steel and Heavy Hardware warehouse. It is divided into a number of departments, including Hardware, Tinware, House Furnishing Goods, Saddlery Hardware, Cutlery, Silver Ware, Bicycles and Sundries, Guns and Ammunition, Fishing Tackle and Sporting Goods. This concern are also manufacturers of the Blue Line Lumbering Tools, easy rolling Shelf Ladders, Harness, Horse Collars and strap work, all of which are illustrated and described in the catalogue. It is especially requested in order to facilitate a prompt and careful filling of mail orders, which are particularly solicited, that buyers will use the figures and numbers given in the catalogue so that wants may be clearly understood and prompt and accurate shipment made. The catalogue is well printed, conveniently arranged and satisfactorily represents the large and varied line of goods marketed by this house.

Wm. W. Fleming has recently purchased the Hardware and general merchandise business of Harvey Walling, Alden, Ill. Mr. Fleming's terms are strictly cash, and he intends adding a line of Agricultural Implements in the spring.

# Hardware Store Arrangement. SAMPLING SCREEN DOORS.

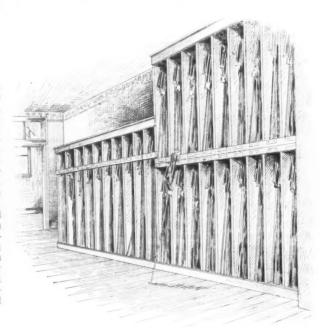
Sampling Screen Doors is a problem which comparatively few Hardware merchants have solved satisfactorily. The accompanying cut shows the method used by Weed & Co. of Buffalo, N. Y., in their retail store. The sample doors are hinged to an upright panel, side



by side, about 6 inches apart. This allows swinging them out of the way in an instant, and takes up but little space. On each door is tacked a card, stating the price and different dimensions of the Doors in stock. The retail stock is kept in the basement in upright bins.

# TRANSOM LIFTERS.

The plan of keeping Transom Lifters in stock followed by Weed & Co. of Buffalo, N. Y., is shown in the accompanying cut. The bins are located on the second



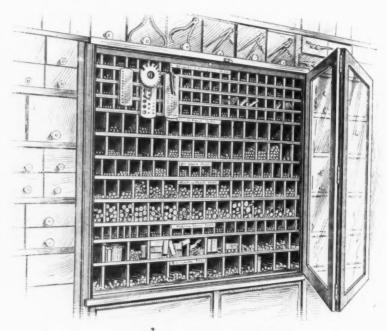
floor, one for each size and length. As soon as Transom Lifters are received each arm is tied to its Lifter and the goods placed in their respective bins. A sample of each Lifter is carried in the retail department, in addition to which a top lift and a bottom lift are fastened to two windows, to show customers how they are operated.

# Drill and Tap Case.

A CASE for holding Drills and Taps, in use in the store of Wood & Menagh, Jersey City, N. J., is shown in the accompanying illustration. It measures 32 inches high by 37 inches long and is divided into a large number of compartments to hold the many varieties and sizes of Taps and Drills carried in stock. These are

# Slip for Use in Tin Shop.

THE accompanying cut shows a Time and Stock Slip originated and used by C. J. Rumsey & Co. of Ithaca, N. Y. These Slips are intended to remind the tinsmith of the items used on jobs. He is supposed to look the slip over carefully when making a charge for work, so as to omit nothing. The system, however, has not proved infallible. The firm believe the correct way to keep track of time and stock in a tin shop is to put a careful clerk at a desk in the shop and have an account kept of how each workman spends each hour of the day. This



Case for Holding Drills and Taps

divided on the shelves as follows: Stubs' Steel Wire Gauge Drills, four shelves; Straight Shank Drills, two shelves; Bit Stock Drills, one shelf; Machine Shank Drills, two shelves; Machine Screw Taps, one shelf; Hand Taps, one shelf, and Blacksmiths' Taps, one shelf.

A novel feature of this case is the way in which the two doors are hung. By reference to the illustration, it will be seen that one door is hinged on the other, so that they can be easily folded back out of the way. These doors are generally kept closed so as to protect the contents.

A number of gauges are hung within the case, so as to be of easy access when required.

# S. F. Myers Company's Catalogue.

S. F. MYERS COMPANY, 48 and 50 Maiden lane, New York, have just issued "The New York Jeweler" for 1901, as their annual catalogue is known. It is a book of over 500 pages, size 9 x 12 inches, with linen lined covers, and the firm believe it to be the most complete book they have ever issued. In comparing it with last year's issue, we find they have altered the form somewhat, and, utilizing a high grade paper, have inserted a large number of fine half-tone plates, particularly in their silverware, cut glass, fine umbrellas, leather goods and gold and diamond jewelry departments. The prices in the catalogue, being list and subject to a uniform discount, makes it particularly desirable.

The Special Notice on another page signed "Teutonic" will be of interest to manufacturers of Iron and Steel, Tools, Machines, &c., referring as it does to a German house who offer their services as sole agents for Germany and Northern Europe. It will be noted that a representative of the house is now in New York City, who is prepared to confer with any who may be contemplating such an arrangement.

clerk could also keep the time of each separate job, which would be of assistance to the foreman in estimating the cost of different goods. It is the opinion of the

# Time and Stock Slip. Time Eare Trough, \$4 inch. 1c - 1 x. 44 1 c - 1 x. 6 1 c - 2 x. Galraniaed Eare Trough, \$4 inch. 6 1 c - 2 x. 7 1 c - 1 x. 10 2 x 2 x 2 c - 1 x. 10 2 x 2 x 2 c - 1 x. 10 2 x 2 x 2 c - 1 x. 10 2 x 2 x 2 c - 1 x. 10 2 x 2 x 2 c - 1 x. 10 2 x 2 x 2 c - 1 x. 10 2 x 2 x 2 c - 1 x. 10 2 x 2 x 2 c - 1 x. 10 2 x 2 x 2 c - 1 x. 10 2 x 2 x 2 c - 1 x. 10 2 x 2 x 2 c - 1 x. 10 2 x 2 x 2 c - 1 x. 10 2 x 2 x 2 c - 1 x. 10 2 x 2 x 2 c - 1 x. 10 2 x 2 x 2 c - 1 x. 10 2 x 2 x 2 c - 1 x. 10 2 x 2 x 2 c - 1 x. 10 2 x 2 x 2 c - 1 x. 10 2 x 2 x 2 c - 1 x. 10 2 x 2 x 2 c - 1 x. 10 2 x 2 x 2 c - 1 x. 10 2 x 2 x 2 c - 1 x. 10 2 x 2 x 2 c - 1 x. 10 2 x 2 x 2 c - 1 x. 10 2 x 2 x 2 c - 1 x. 10 2 x 2 x 2 c - 1 x. 10 2 x 2 x 2 c - 1 x. 10 2 x 2 x 2 c - 1 x. 10 2 x 2 x 2 c - 1 x. 10 2 x 2 x 2 c - 1 x. 10 2 x 2 x 2 c - 1 x. 10 2 x 2 x 2 c - 1 x. 10 2 x 2 x 2 c - 1 x. 10 2 x 2 x 2 c - 1 x. 10 2 x 2 x 2 c - 1 x. 10 2 x 2 x 2 c - 1 x. 10 2 x 2 x 2 c - 1 x. 10 3 x 2 c - 1 x. 10 3 x 2 c - 1 x. 10 2 x 2 x 2 c - 1 x. 10 3 x 2 c - 1 x. 10 3

Slip for Use in Tin Shop.

firm that in a large shop such a clerk would pay, but in a shop with only a few workmen it might prove too expensive.

# Price-Lists, Circulars, &c.

Union Metallic Cartridge Company, Bridgeport, Conn., and 313-315 Broadway, New York, have just issued two interesting booklets. One is entitled "Game Laws of the United States and Canada," being a compilation of the gunning laws, with special reference to seasons and other provisions and restrictions in force in the various States and Territories of the United States and the provinces of Canada, including also 1900 legislation. The other is a record of their ammunition in shooting contests in the United States, with rules governing the different departments of shooting, giving targets and records of value to those who use ammunition. Both of these books, one of which is copyrighted, will be sent to interested persons on application.

SARGENT & Co., 149-153 Leonard street, New York: Illustrated booklet describing the Eclipse Check and Spring for noiselessly closing doors of all kinds.

Chas. E. Miller, 97 to 101 Reade street, New York: Catalogue No. 2, giving illustrations and list prices of Automobile Parts, Fittings, Sundries, Tools, &c.

ROCHESTER WRINGER COMPANY, Rochester, N. Y.: Catalogue showing Rochester, Reversible and "B. L. W." Wringers, Wash Bench, Ironing Table, Adjustable Clothes Rack and Self Wringing Mop.

THE TOLEDO SAW COMPANY, Toledo, Ohio: Catalogue relating to "Toledo Blade" Circular Saws and other Saws commonly used in saw mills, stave mills, planing mills, &c.; Planer, Molding and Stave Knives, &c.

E. S. Hulbert & Co., Bernardston, Mass.: Catalogue showing their line of Cutlery for the use of abattolrs, butchers, packers, hotel and restaurant chefs, grocerymen, marketmen, &c.

# Trade Items.

George Wright, 121 Fulton street, New York, is compiling an illustrated catalogue entitled "America's Greatest Manufacturers," somewhat on the line of a similar work issued in England recently, entitled "Britain's Greatest Manufacturers." This book will include the metal and engineering trades and is intended for home and foreign markets, containing illustrations of manufacturing plants, products, trade markets, &c., as well as interesting features of the leading American cities. When published the work will be distributed gratis in the important parts of the world.

The Dillon-Griswold Wire Company, Sterling, Ill., have issued an illustrated circular, which not only describes the Sterling Woven Wire Fence, but also gives full details of efficient methods of setting posts and anchoring and bracing straining posts, as well as stretching the fence. The company have brought out a new stretcher, which is ingeniously constructed and has been thoroughly tested. It is stated that it will stretch a roll of fence of any length and over any kind of ground, and is of so simple a character that a boy can operate it.

The daily press reports of a fire in the establishment of the Scott Hardware Company, Paducah, Ky., are without foundation. The company advise us that they have suffered no loss whatever from fire.

Leonard J. Lomasney has been appointed general sales agent of the Peerless Rubber Mfg. Company, 16 Warren street, New York. Mr. Lomasney has had considerable business experience, having been connected for several years with the sales department of this company.

# Among the Hardware Trade.

F. J. Bahr has purchased the Hardware, Stove, Agricultural Implement and Sporting Goods business of Nelson S. Miller, Eagle, Neb.

E. S. Clayton has bought the Hardware and Agricultural Implement business formerly conducted by Woods & Nowlin, Lewisburg, Tenn. Mr. Clayton expects to double the stock thus acquired and may also add a line of Buggies.

Starr & Arner, Clyde, Ohio, have bought the business of Jackson Hardware Company of that city, and will remove the stock to their own establishment.

Randall & Brown are a new firm at Fortville, Ind., handling Shelf and Heavy Hardware, Stoves, Tinware, Agricultural Implements, Sporting Goods, &c.

A. B. Ashley, formerly manager of the firm of W. H. Hale & Co., Milton, Vt., has commenced business under

his own name. Mr. Ashley carries a line of Shelf and Heavy Hardware, Stoves and Tinware, Agricultural Implements, Sporting Goods, &c.

Rehkopf & Siemon have disposed of their Hardware business in Douds, Iowa, to Hootmon & Siemon, who continue at the old stand.

T. B. Curtis has succeeded Curtis & Boyd, Hardware, Stove and Farm Implement merchants, Woodburn, Iowa.

W. J. Holloway has bought the Hardware, Stove, Farm Implement, Wagon and Buggy business of Tipton & Shenkle, Churdan, Iowa. Mr. Holloway occupies a new brick storeroom, 22 x 70 feet.

Clark Bros. & Smyser have been succeeded by Clark Bros. & Burger, Moulton, Iowa. The firm will shortly remove to a new building now being erected for their use.

Haas & Hatcher have sold out their Hardware, Stove, Farm Implement and Sporting Goods business in Lamoni, Iowa, to Graves & Yost.

C. B. Moffitt has succeeded Moffitt & Shumway, Dorchester, Neb., dealers in Shelf Hardware, Stoves, Tinware and Sporting Goods.

Hamilton & Rasberny have lately entered the Hardware, Stove, Tinware and Agricultural Implement business in Rochdale, Texas.

Griffith & Kolb, Rewey, Wis., have disposed of their business to Eastman Lumber Company.

Wm. M. Curtis is building an addition to his Hardware store in Ballard, Wash.

Frank Rettig has moved his Hardware business from North Manchester to Wabash, Ind.

C. I. Long has succeeded Long & Chew, dealers in Hardware, Harness, Stoves, Wind Mills, Buggies, &c., Hopeville, Iowa.

Culver Bros. are successors to Chas. J. Macbeth in the Hardware business in Mankato, Minn. Culver Bros. were formerly for 14 years in the general merchandise business at Button, S. D.

Boyle & Son have disposed of their stock of Hardware, Agricultural Implements, &c., in Liberal, Kan., to M. H. Schandrett.

Pinkley & De Long have purchased the Barnes Hardware store in Brink Haven, Pa.

W. B. Gislason has succeeded Gislason Bros., Minnesota, Minn., in the Hardware, Stove and Agricultural Implement business.

John F. Howe has recently embarked in business at Freedom, Beaver County, Pa. He carries a stock of Shelf and Heavy Hardware, Stoves and Tinware, Agricultural Implements. Sporting Goods, Plumbing Goods, Pipe Fittings, &c. He is also prepared to do all kinds of shop work, slating, tinning, steam and hot water heating, &c. Mr. Howe occupies a new brick building, which has been attractively fitted up with rolling step ladders, floor and wall cases and other modern store fixtures.

Cass-Damerel Hardware Company have succeeded Nauerth & Cass Hardware Company, Los Angeles, Cal., wholesale and retail Shelf Hardware, Stoves, Plumbing, Tinning, Hot Air Furnaces, &c. The officers of the new company are B. H. Cass, president; C. W. Damerel, vice-president; C. G. Packard, secretary, and V. P. Brown, treasurer. Mr. Damerel, for a period exceeding 20 years, was a traveling salesman representing Hibbard, Spencer, Bartlett & Co.

The "E. R. Armentrout Hardware," Staunton, Va., are opening a new store at 4 S. Augusta street, in that city, handling Hardware, Stoves and House Furnishing Goods. Business will be continued at their old stand, 13 and 15 Johnson street, as heretofore. Both stores will be conducted under the same style.

The Meyer-Neville Hardware Company, Meridian, Miss., who commenced the wholesale and retail business on September 1, advise us that they are doing a large and increasing business and have found it necessary to double their force.

# Wind Mill Pump Standards.

The Humphryes Mfg. Company, Mansfield, Ohlo, are offering wind mill pumps with long fulcrum, as shown herewith. In Fig. 1 is illustrated a wind mill force pump which is the same as the company's H 425, with the addition of the long fulcrum. It is pointed out that the long fulcrum gives a great leverage, fitting the pump for deep well service. The stock is tapped for pipe connection just back of the spout, which is fitted with a detachable hose coupling. A wind mill lift pump is shown in Fig. 2, the standard being the same as the company's H 800, the addition of the long fulcrum making it, it is explained, easier to work. The stock is tapped just under the spout for pipe connection, so that no water stands in the spout, it is remarked, and there is no danger of freezing. The company are placing on the market a new enameled cylinder Pitcher pump, with



In Fig. 3 is shown a combination rule and glass cutter, which the company are putting on the market. The

Fig. 1.-Improved Head Joint.

cutter wheel is made of fine hardened steel so as to be serviceable, and the rule is supplied with a glass breaker

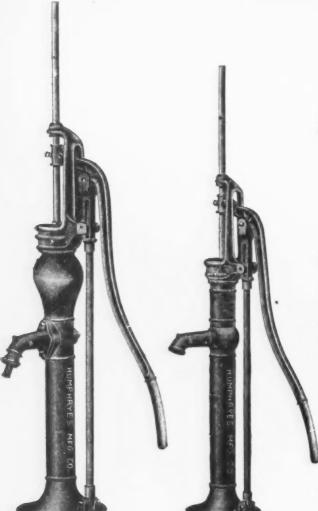


Fig. 1.—Wind Mill Force Pump Standard, H 447.

Fig. 2.—Wind Mill Lift Pump Standard, H 448.

best quality of enamel used for coating to make a smooth surface. The company are prepared to furnish any of their set length lift or force pumps with enameled cylinders.



The accompanying cuts represent improvements in brass bound rules which have been adopted on all bound and half bound rules manufactured by the H. Chapin's Son Company, Pine Meadow, Conn. A description of these improvements appeared in our issue, 25th ult., but a mistake was made in the captions given in connection with the cuts of the rule. The binding of the rules comes up full width and strength to the head, which allows the joint plates to fit in between, as in Fig. 1, this arrangement permitting the binding pin to be placed near the head, making, it is remarked, a perfect and strong joint. In Fig. 2 the middle joint is shown, the construction of which, it is explained, strengthens the rule at this point and adds to its appearance. The improvements, it is stated, add no extra cost to the rules.

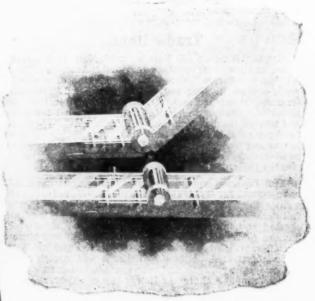


Fig. 2. - Improved Middle Joints.

in the head. Another good, simple way to break the glass, it is explained, is to slip it between the middle

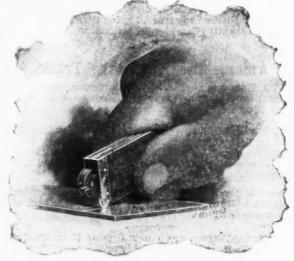


Fig. 3.- Combination Rule and Glass Cutter.

joints of the rule when closed and firmly held in the hand.

#### Southington Emery Wheel Dresser.

The improved emery wheel dresser herewith shown is put on the market by the Southington Cutlery Com-

makers. The handles are made from select sole leather, pressed on the square bar, so that, the manufacturers state, there will be no twist, break or pull out. The handles are referred to as being burnished like ebony



Southington Emery Wheel Dresser.

pany, Southington, Conn. In each set of cutters in the dresser are two broad tooth wheels, which, it is remarked, not only protect the wear of the cutters, but open a clean and level cutting surface on the wheel and prevent unnecessary waste. The cutters have a direct bearing, revolving on a hardened steel sleeve, the sleeve revolving on a steel screw. The manufacturers state that these cutters will wear a long time, that emery wheels will last longer where these dressers are used and that the cutters fit regular holders.

#### Lock Lever Heel Button Skate.

Barney & Berry, Springfield, Mass., have put on the market for this season's trade the lock lever heel button skate here illustrated. The blade of this skate in design is similar to that used on their safety edge hockey skate, is similar to that used on their safety edge hockey skate, brought out in a previous season. except that instead of being straight from heel to toe on the bottom of the blade, the blade is slightly curved for fancy or figure skating. This design while giving a strong blade is lighter in weight than that ordinarily used. They are made in all sizes, from 8 to 12 inches inclusive, rising by ½ inch. The skate is also adjustable sideways upon any style or size of shoe. For an additional charge this skate will be assembled with bolts and nuts and furnished with a pair of safety edge hockey blades extra, thus with a pair of safety edge hockey blades extra, thus making the skate interchangeable for figure or speed skating. When ordered for ladies' use this skate will be making the skate interchangeable for figure or speed skating. When ordered for ladies' use this skate will be assembled with narrow foot plates. Grade 4 is orna-mented and beveled, and grade 6 is ornamented and bev-eled and has a diamond toe. This entire line of skates is carried in stock for New York and adjacent territory to give them the richest appearance possible. The toolsare made in 1/4, 5-16 and 3/8 inch sizes.

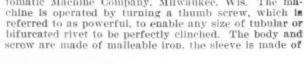
#### The Handy Riveter.

An illustration is given herewith of the Handy riveter, which is manufactured by the Milwaukee Au-



The Handy Riveter.

tomatic Machine Company, Milwaukee, Wis. The machine is operated by turning a thumb screw, which is referred to as powerful, to enable any size of tubular or bifurcated rivet to be perfectly clinched. The body and





Lock Lever Heel Button Skate.

by Walter B. Stevens & Son, 114 Chambers street, New

#### Leather Handle Screw Drivers.

The accompanying illustration represents the Union brand of gunsmiths' and machinists' screw drivers, with

cold rolled steel and the plunger of hardened tool steel. It weighs 5 ounces, can easily be carried in the pocket and is designed for mending broken harness, straps, belts, &c.

Acme Hardware Company, H. G. Dyson, president, Richmond, Va., have been incorporated with a capital



Leather Handle Screw Drivers.

leather handles, just put on the market by the Union Mfg. Company, Buffalo, N. Y. The bits are drop forged from best tool steel, every tool being warranted by the stock of \$10,000. They will conduct a wholesale and retail business in Hardware, Carriage and Wagon Ma-

Goodsmanuf

the fa turers as are small

buyer

ers. v usual price factu

Sp

#### New York Wall Ties and Sleeper Clips.

The accompanying illustrations relate to ties and clips put on the market by Hurd & Co., 570-576 West Broadway. New York. The wall ties, shown in Fig. 1, are

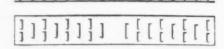


Fig. 1 .- New York Sheet Metal Wall Tie,

made of cold rolled steel, 8½ inches long and 1¼ inches wide, but can be made any length desired. The smaller cut shows a side view of the tie and the larger one a top view. The manner of applying the tie is shown in Fig. 2. In the rougher and cheaper construction of brick walls, where wall ties have been used, it is explained

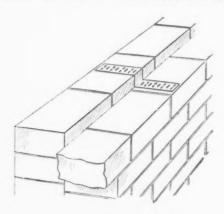


Fig 2.-Application of Wall Tie

that a growing need has developed for a tie which is readily bent in order to conform to the unevenness of brick walls. The top of one brick may set from ½ to ½ inch below the adjoining brick to be bonded. The tie has been brought out to meet this condition. The strip

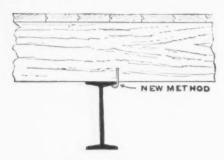


Fig. 3.-New York Sleeper Clip.

of metal has been sheared and formed, it is remarked, so that the inward directing projections insure a perfect grip. The sleeper clip and its application is shown in Fig. 3. The clip is made of 3-16 inch steel wire. In Fig. 4 is shown the old method of accomplishing the

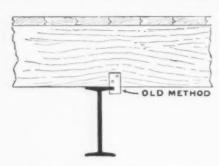


Fig. 4 -Former Style of Sleeper Clip.

same results. It is pointed out, with the old method, that there was not only the labor of holding the large piece of sheet iron in place, but that there was additional labor in driving two nails. The clip illustrated in Fig. 3 is in one piece, the sheared point allowing it to be driven

readily. The new clips are referred to as being much cheaper than the old style, and can be ordered any style or length. The firm signify their willingness to send samples and quotations of the tie and clip upon application.

The Hardware and Stove store of E. F. Warman, Mt. Vernon, Ill., was destroyed by fire on the 15th ult. Mr. Warman managed to save a large part of his Shelf Hardware and Stove stock, and has removed to temporary quarters.

| CONTENTS.                                                                                                              |            |
|------------------------------------------------------------------------------------------------------------------------|------------|
| Another Great Hydraulic Power Plant. Illustrated                                                                       | E. 1       |
| The Implement and Vehicle Manufacturers                                                                                | 7          |
| Handling Machine Shop Scrap                                                                                            | 7          |
| Points in the Manufacture of the Locke Steel Link Belting. Illus The Dividends of Metal Mines                          | 9          |
| Contractors and the War Department                                                                                     | 9          |
| A Simple Home Made Wheel Press. Illustrated                                                                            | 11         |
| Our Population                                                                                                         | 11         |
| The Fuel Problem of China and the Far East                                                                             | 12         |
| Machine Molding                                                                                                        | 14         |
| The Woods Planer and Timber Sizer. Illustrated                                                                         | 16         |
| The Brown & Sharpe High Speed Milling Attachment. Illustrated. The Dominion Iron & Steel Company, Limited. Illustrated | 17<br>18   |
| The Austrian Iron Combination                                                                                          | 23         |
| The Eastern Shipbuilding Company                                                                                       | 23         |
| British Production of Pig Iron and Steel                                                                               | 24         |
| Editorials ·                                                                                                           | ~1         |
| Favorable Trade Conditions in Home Markets                                                                             | 25         |
| Comfortable Workshops  An Increase in the Navy                                                                         | 25 27      |
| American Competition in South Africa                                                                                   | 27         |
| Manufacturing:                                                                                                         |            |
| Iron and Steel                                                                                                         | 28<br>28   |
| Hardware                                                                                                               | 29         |
| Miscellaneous                                                                                                          | 29         |
| The Iron and Metal Trades : A Comparison of Prices                                                                     | 30         |
| Chicago                                                                                                                | 30         |
| Philadelphia                                                                                                           | 31         |
| St. Louis                                                                                                              | 32         |
| Pittsburgh                                                                                                             | 33         |
| Birmingham                                                                                                             | 31         |
| Cincinnati                                                                                                             | 34<br>35   |
| The German Iron Market                                                                                                 | 35         |
| New York                                                                                                               | 36         |
| Metal Market                                                                                                           | 36         |
| The Metropolitan Pipe Contracts                                                                                        |            |
| Obituary                                                                                                               |            |
| The Standard Oil Dividend                                                                                              |            |
| The New York Machinery Market                                                                                          |            |
| Hardware:                                                                                                              | 40         |
| Dissolution of the Continental Company                                                                                 |            |
| The Meeting of the National Hardware Association                                                                       |            |
| Department Stores and Catalogue Houses                                                                                 |            |
| The Trade Outlook                                                                                                      |            |
| Tone of the Hardware Market                                                                                            | 40         |
| Special Reports                                                                                                        |            |
| Notes on Prices Inter-State Retail Hardware Dealers' Association                                                       |            |
| New England Hardware Dealers' Association                                                                              | 44         |
| Export Business                                                                                                        |            |
| Requests for Catalogues, &c                                                                                            |            |
| Morley Bros.' New Catalogue                                                                                            |            |
| Hardware Store Arrangement :                                                                                           | 42         |
| Sampling Screen Doors. Illustrated                                                                                     |            |
| Drill and Tap Case. Illustrated                                                                                        | 46         |
| S. F. Myers Company's Catalogue                                                                                        |            |
| Price-Lists, Circulars, &c                                                                                             |            |
| Trade Items                                                                                                            | 47         |
| Among the Hardware Trade                                                                                               |            |
| Wind Mill Pump Standards. Illustrated                                                                                  |            |
| Southington Emery Wheel Dresser. Illustrated                                                                           | . 49       |
| Lock Lever Heel Button Skate. Illustrated                                                                              |            |
| Leather Handle Screw Drivers. Illustrated                                                                              |            |
| New York Wall Ties and Sleeper Clips. Illustrated                                                                      | . 50       |
| Current Metal Prices                                                                                                   | . 51<br>58 |
| Current metal frices                                                                                                   | 96         |

# Current Hardware Prices.

**REVISED** 

General Goods.—In the following quotations General Goods—that is, those which are made by more than one manufacturer, are printed in Italics, and the prices named represent those current in the market as obtainable by the fair retail Hardware trade, whether from manufacturers or jobbers. They apply to such quantities of goods as are usually purchased by retail merchants. Very small orders and broken packages often command higher prices. while lower prices are frequently given to larger

Special Goods.—Quotations printed in the ordinary type (Roman) relate to goods of particular manufacturers, who are responsible for their correctness. They usually represent the prices to the small trade, lower prices being obtainable by the fair retail trade, from manufacturers.

Cut Prices.—In the present condition of the market there is a good deal of cutting of prices by the public trade, whose quotations are often lower than those of the

Manufacturers.

Names of Manufacturers.—For the names and addresses of manufacturers see the advertising columns and also The Iron Age Index Supplement (May 3 1900), which gives a classified list of the products of our advertisers and thus serves as a directory of the Iron, Hardware and Machinery trades.

Standard Lists.—A new edition of "Standard Hardware Lists" has been issued and contains the list prices of many leading goods.

Additions and Corrections.—The trade are requested.

Additions and Corrections .- The trade are requested to suggest any improvements with a view to rendering these quotations as correct and as useful as possible to Retail Hardware Merchants.

| prices being obtainable by the fa<br>facturers or jobbers.                                                                                                                                                                                                                                                                                                                                        | ir retail trade, from manu-                                                                                                                                                                                                                                                                                                  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Adjusters Blind— Domestic, # doz. \$3.0033\\$33\\$210\\$ North's                                                                                                                                                                                                                                                                                                                                  | Cheap, Handled Axes\$5.50@5.75 Beveled, add 25c doz.  Axie Grease—See Grease, Axie. Axies—  Iron or Steel. Concord. Loose Collar\$5 c  No. 1 Common\$5 c  No. 1 Common\$5 c  No. 1 Common\$5 c  No. 2 Solid Collar\$5 c  No. 3. Solid Collar\$5 c  Nos. 15 to 18\$6 c  Nos. 15 to 18                                         |
| Lots of 3 doz30%                                                                                                                                                                                                                                                                                                                                                                                  | Steel Crowbars, 10 to 40 lb., per lb                                                                                                                                                                                                                                                                                         |
| Augers and Bits— Com. Double Spur. 60&10&10@70&5% Boring Machine Augers                                                                                                                                                                                                                                                                                                                           | Beams, Scale— Scale Beams, List Jan. 12, '83. Chattillon's No. 1. 3063045% Chattillon's No. 2. 40% Beaters— Egg— Standard Co. Standard Co.                                                                                                                                                                                   |
| C. E. Jennings & Co.:  No. 10 ark [lb. R. Jennings list. 405 No. 30. R. Jennings' List. 505 Russell Jennings' List. 506 Russell Jennings' List. 606 L'Hommedieu Car Bits 15&10615 x 10855 Pugh's Black. 205 Pugh's Black. 355 Snell's Auger Bits. 606 Snell's Car Bits, 12-in. twist. 607 Wright's Jennings' Bits (807 Snell's Car Bits, 12-in. twist. 607 Wright's Jennings' Bits (R. Jennings') | No. 10 Cast Handle Dover. # gro. \$5.00 No. 15 Extra Heavy Steel Handle. # gro. \$15.00 Taplin Mrg. Co. # gro. \$1.00 Taplin Mrg. Co. # gro. No. 50 Smail Family size. # gro. No. 100 Regular Family size. # \$5.00 No. 102 Regular Family size. \$1.00 No. 152 Large # gmily size, tinned No. 152 Large Family size, tinned |
| Sit Stock Drills-<br>  Standard List                                                                                                                                                                                                                                                                                                                                                              | Lyon's, Standard States                                                                                                                                                                                                                                                                                                      |
| Gimlet Bits— Common Double Cutgro. \$2.00@2.75 German Patterngro. \$3.25@5.00 Double Cut, makers' lists.                                                                                                                                                                                                                                                                                          | Doz\$6.75 7.25 8.50 9.50 12.00 14.50                                                                                                                                                                                                                                                                                         |
| Hollow Augers-                                                                                                                                                                                                                                                                                                                                                                                    | Hand-                                                                                                                                                                                                                                                                                                                        |

| Domestic, # doz. #3.0033/4333/42105<br>North's                                                                                                                                                                 | Axio Grease - See Grane, Axie.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 1   |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| Zimmerman's See Fasteners. Blind.                                                                                                                                                                              | Axies- Iron or Steel.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 1   |
| Window Stop-                                                                                                                                                                                                   | Concord, Loose Collar                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |     |
| Ives' Patent                                                                                                                                                                                                   | No 1 Common Sollie 79                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |     |
| Ammunition—See Caps, Car-                                                                                                                                                                                      | No.14 Com. New Style 35 @4 c 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |     |
| tridges, Shells, &c.                                                                                                                                                                                           | No. 7, 8, 11 to 14                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |     |
| Anvils-American-                                                                                                                                                                                               | No. 14 Com. New Style3464 c No. 28 Solid Collar .3464 c Nos. 78, 11 to 14 .756104 Nos. 78, 11 to 18                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 4   |
| Eagle Anvils P n 71467346 Hay-Budden, Wrought 96946 Horseshoe brand, Wrought 946946 Horseshoe brand, Wrought 9 n 74686 Trenton, Wrought 9 n 846846 Buel Pat Trenton Wrought 9 n 96446 Vuican Wrought 9 n 96446 | Nos. 19 to 23                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 8   |
| Horseshoe brand, Wrought. 944946                                                                                                                                                                               | Common and Concord, not turned.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |     |
| Trenton, Wrought B 846844                                                                                                                                                                                      | 15. 50                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |     |
| Buel Pat. Trenton Wrought. # B 9694                                                                                                                                                                            | Common and Concord, turned, lb. 6c                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |     |
|                                                                                                                                                                                                                | Common and Concord, turnedlb. ec<br>Half Patentlb. 9c<br>Balances—                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |     |
| Armitage's Mouse Hole84(@2)4¢<br>Peter Wright's912@34¢                                                                                                                                                         | Sann-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |     |
| Anvil, Vise and Drill-                                                                                                                                                                                         | Caldwell new list                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |     |
| Millers Falls Co., \$18.00                                                                                                                                                                                     | Spring— Spring Balances                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |     |
| Apple Parers-See Parers,                                                                                                                                                                                       | Chatillon's Light Spg. Balances 10&10%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ı   |
| Apple, &c.                                                                                                                                                                                                     | Chatillon Straight Balances                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | ı   |
| Aprons, Blacksmiths'-                                                                                                                                                                                          | Chatillon's Large Dial                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ı   |
| Lots of 1 doz                                                                                                                                                                                                  | Barb Wire—See Wire, Barb. Bars— Crow—                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | ı   |
| Lots of 3 doz                                                                                                                                                                                                  | Steet Crowdars, 10 to 40 to., per to                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | ١   |
| Augers and Bits-                                                                                                                                                                                               | 3@354C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ı   |
| Com. Double Spur 60&10&10@70&5\$                                                                                                                                                                               | Beams, Scale-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | I   |
| Boring Machine Augers                                                                                                                                                                                          | Scale Beams, List Jan. 12, '83.  Chattillon's No. 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | i   |
| Car Bits, 12-in.twist                                                                                                                                                                                          | Chattillon's No. 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | ı   |
| Jennings' Pattern:                                                                                                                                                                                             | Beaters- Egg-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | ı   |
| Auger Bits                                                                                                                                                                                                     | Standard Co.:<br>No. 5 Steel Handle Dover. # gro. \$6.50                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | ١   |
| Forstner Pat. Auger Bits25%                                                                                                                                                                                    | No. 10 Cast Handle Dover. 8 gro. \$8.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | ١   |
| C. E. Jennings & Co.:<br>No. 10 axt. iin. R. Jennings list404                                                                                                                                                  | No. 15 Extra Heavy Steel Handle,                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | ١   |
| No. 30, R. Jennings' List 50%                                                                                                                                                                                  | Rival, @ gro\$10.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | ì   |
| L'Hommedieu Car Bits15&10@15&10&5g                                                                                                                                                                             | No. 50 Small Family size\$6.50                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | ı   |
| Pugh's Jennings' Pattern35%                                                                                                                                                                                    | Standard Co.:  No. 5 Steel Handle Dover. # gro. \$6.50  No. 10 Cast Handle Dover. # gro. \$8.00  No. 10 St-el Handle Dover. # gro. \$8.00  No. 15 Extra Heavy Steel Handle,  # gro. \$15.00  Taplin Mfg. Co.: # gro.  No. 50 Small Family size. \$8.50  No. 100 Regular Family size tinned.  \$9.50                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | ۱   |
| Snell's Auger Bits                                                                                                                                                                                             | No. 150 Large Pamily size. \$15.04                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | ١   |
| Forstner Pat. Auger Bits. 25% C. E. Jennings & Co. 2. No. 10 ext. Hp. R. Jennings list. 40% No. 30, R. Jennings' List. 50% Russell Jennings'                                                                   | \$9.50 No. 150 Large **amily size\$15.00 No. 152 Large Family size, tinned \$17.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | I   |
|                                                                                                                                                                                                                | Lyon's, Standard size % doz. \$1.75<br>Wonder (S. S. & Co.) # gro. \$7.50                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | ı   |
| Bit Stock Drills-                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | ١   |
| Standard List                                                                                                                                                                                                  | Rigelemith Standard List. 70@ 70455                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 1   |
| Expansive Bits—<br>Clark's small, \$18; large, \$2650&10%                                                                                                                                                      | C. E. Jennings & Co., Blacksmith. 60&10%<br>C. E. Jennings & Co., Hand                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 1   |
| Lavigne's Clark's Pattern, No. 1, W doz., \$26; No. 2, \$18 50&10\$ C. E. Jennings & Co., Steer's Pat 33145 Swan's 60%                                                                                         | Blacksmiths-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 1   |
| C. E. Jennings & Co., Steer's Pat33143                                                                                                                                                                         | Inch 30 33 34 36 38 40<br>Eac 1.\$3.70 3.95 4 55 5.10 5.70 6.55                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | ١   |
| Gimlet Bits-                                                                                                                                                                                                   | Eac 1. \$3.70 8.95 4.55 5.10 5.70 6.55 Extra Length:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | ١   |
| Common Double Cut., gro. \$2.00@2.75                                                                                                                                                                           | Each .\$4.25 4.85 5.40 5.95 6.80 7.95                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 1   |
| German Patterngro, \$3,25@5.00 Double Cut, makers' lists                                                                                                                                                       | Molders-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 1   |
| \$\$\$€5@.50&10\$                                                                                                                                                                                              | There de 75 7 95 9 50 0 50 19 00 11, 50   w                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 1   |
| Hollow Augers— Ames. 25&104 Bonney's Adjustable, \$ doz \$16,00 New Patent 25&105 Universal 205                                                                                                                | Doz\$6.75 7.85 8.50 9.50 12.00 14.50                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 1   |
| Bonney's Adjustable, \$\foata\ doz\$16.00                                                                                                                                                                      | Hand—<br>Inch 6 7 8 9 10 18<br>Doz\$3.75 4.25 4.50 5.00 5.75 6.75                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 1   |
| New Patent25&10%<br>Universal25&10%                                                                                                                                                                            | Bells- Cow-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 1   |
| Ship Augers and Bits-                                                                                                                                                                                          | Ordinary goods                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 1   |
|                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1   |
| C. E. Jennings & Co.:                                                                                                                                                                                          | Texas Star50&10%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 1   |
| Watrous                                                                                                                                                                                                        | ZEROG B GOOD TO THE STATE OF TH | 1   |
| Awl Hafts, See Hafts, Awl.                                                                                                                                                                                     | Gong, Yankee55%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1   |
| Awis-<br>Brad Awis:                                                                                                                                                                                            | Gong, Yankee                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 1   |
| Handledgro. \$2,75@3,10<br>Unhandled, Shouldered gro.63@666                                                                                                                                                    | Hand Bells, Polished60@60&10%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | -1  |
| Unhandled, Shouldered gro.63@666<br>Unhandled, Patentgro.66@706                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1   |
| Peg Awls:                                                                                                                                                                                                      | Nickel Plated                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | - 1 |
| Unhandled, Patentgro. 31@34c0<br>Unhandled, Shouldered.gro.65@70c0                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1   |
| Scratch Awls:                                                                                                                                                                                                  | Form Pella Ib 0001/a                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 1   |
| Handled, Commongro. \$3.50@4.03<br>Handled, Socketgro. \$11.50@12.00                                                                                                                                           | Steel Alloy Church and School                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 1   |
| Awl and Tool Sets-See                                                                                                                                                                                          | William of & Habbs Mes Co. Commission                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 1   |
| Sete, Awl and Tool.                                                                                                                                                                                            | Beiting Rubber Common Standard 75@75.4104                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 1   |
| Axes-                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1   |
| First Quality, best brands. \$6.25@6.50<br>First Quality, other brands \$6.00@6.25                                                                                                                             | Standard                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |     |
| Jobbera' Specia: Brands:                                                                                                                                                                                       | High Grade 50%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 1   |
| Good Quality                                                                                                                                                                                                   | Leather—<br>Extra Heavy, Short Lap50&10@60%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 1   |
| *                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |     |
|                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |     |

| Trotter Trait wate Merchant                                                                                                                                    |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Regular Short Lap 60&10@60&10&5%<br>Standard                                                                                                                   |
| Cotton— Rossendale-Reddaway B. & H. Co.: Sphinx B-and 60&10% Durable Brand 70%                                                                                 |
| Bench Stops-SeeStops, Bench                                                                                                                                    |
| Benders and Upsetters,                                                                                                                                         |
| Green River Tire Benders and Upset-<br>ters                                                                                                                    |
| Bicycle Goods-                                                                                                                                                 |
| Cha u                                                                                                                                                          |
| Tub s60%                                                                                                                                                       |
| Auger, Gimlet, Bit Stock Drills, &c<br>See Augers and Bits.                                                                                                    |
| Bit Holders—See Holders.                                                                                                                                       |
| Blind Adjusters—See Ad-<br>justers, Blind.                                                                                                                     |
| Blind Fasteners - See Faz-<br>teners, Blind,                                                                                                                   |
| Blind Staples—See Staples, Blind.                                                                                                                              |
| Blocks- Tackle-                                                                                                                                                |
| Common Wooden                                                                                                                                                  |
| Ford's Star Brand Self Lubricating                                                                                                                             |
| Hollow Steel, Ford's Pat. Star Brand 50&10% Lane's Patent Automatic Lock and                                                                                   |
| Junior 30% Stowell's Novelty, Mal. Iron                                                                                                                        |
| Boards, Stove—<br>Zinc, Crystal, &c50&10%                                                                                                                      |
| Boits-                                                                                                                                                         |
| Carriage, Machine &c.—<br>Common, list Jan. 39, '9575&10@80%<br>Norway Iron, \$3.00, list Oct. 7, '86                                                          |
| 75@75&10%<br>Phila. Eagle, \$3.00 list May 24, '99<br>80@80&10%                                                                                                |
| Bolt Ends, list Jan 39, '95, 80@30&104<br>Machine, list Oct. 1, '9975&10@75<br>&10&105                                                                         |
| Door and Shutter—<br>Cast Iron Barrel, Round Brass<br>Knob:                                                                                                    |
| Inch 3 4 5 6 8 Per doz\$0.33 .36 .45 .57 .80 Cast Iron Spring Foot:                                                                                            |
| Cast Iron Spring Foot:   Inch                                                                                                                                  |
| Inch                                                                                                                                                           |
| I Interesses of the                                                                                                                                            |
| Per doz \$0.60 .90 1.15<br>Wrought Barrel Brass Knob:                                                                                                          |
| Wrought Barret Brass Knob; Inch                                                                                                                                |
| Wrought Bronzed.40&5@50&10%<br>Wrought Flush. B. K50&10@60&10%<br>Wrought Shutter40&10&10@60&5%                                                                |
| Wrought Square Neck50@50&10%<br>Wrought Sunk50@50&10%                                                                                                          |
| 30040 dild Flow-                                                                                                                                               |
| Tire-                                                                                                                                                          |
| Common                                                                                                                                                         |
| Eagle Phila., list Oct. 16, '847716%                                                                                                                           |
| Franklin Moore Co.;<br>Norway Phila, list Oct, 16, '8475%<br>Eagle Phila, list Oct, 16, '847744                                                                |
| Norway Phila, list Oct. 16, '8475% Eagle Phila, list Oct. 16, '8477% Eclipse, list Dec. 28, '970% Port Chester Bolt & Nut Company Empire, list Dec. 28, '9970% |
| Bay State, list Dec. 28, '99                                                                                                                                   |
|                                                                                                                                                                |

| 1 | Borers, Tap-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|   | Borers, Tap-<br>Borers Tap, Ring, with Hand'e:<br>Inch 14 14 14 14 3<br>Per doz \$3.50 4.50 5.00 6.50                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| ١ | Per doz. \$3.50 4.50 5.00 6.50 Inch \$14 214                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|   | Inch \$\frac{\psi_4}{27} \frac{\psi_4}{27} \frac{\psi_4}{27} \frac{\psi_4}{27} \frac{\psi_4}{27} \frac{\psi_4}{27} \frac{\psi_4}{27} \frac{\psi_4}{27} \frac{\psi_4}{27} \frac{\psi_4}{27} \frac{\psi_5}{27} \frac^ |
| ١ | Boring Machines—See Ma-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| ١ | Boring Machines-See Machines, Boring.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| l | Roxes Mitre— C. E. Jennings & Co                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| İ | Braces-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| I | Note Most Braces are sold at net prices.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| ١ | Common Ball, American \$1.1966.1 **) Barber's                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 1 | Fray's No. 70 to 120, 81 to 123, 207 to 414. 50&10&51                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| ١ | 414                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| l | Brackets-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| l | Brackets                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| ı | Full cases                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| I | Bright Wire Goods-See                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 1 | Wire and Wire Goods.  Brollers—                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| I | Broilers—<br>Wire Goods Co                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|   | Bucks Saw-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|   | Bull Rings—See Rings, Buli. Butts—Brass— Brass— Wrought list Sept., '9625&10@355 Cast Brass, Tiebout's                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|   | Cast Brass, Tiebout's                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|   | Fast Joint, Broad 50@ \$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|   | Fast Joint. Narrow                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|   | Longe Inint 609/AEG TOT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 1 | Loose Pin 66% & 50 70% Mayer's Hinges 66% & 50 70% Parliament Butts 66% & 50 70% Virought Steel                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|   | Wrought Steel-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|   | Table and Back Flane                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|   | Narrow and Broad                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|   | Loose Pin, Ball and Steenle Tin                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|   | Bronzed Wrt, Nar. and Inside Blind<br>Butts50&10@50&10&55                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|   | Cages, Bird-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|   | Hendryx, Brass:<br>3000, 5000, 1100 series                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|   | 1200 series                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|   | 200, 300, 600 and 900 series 40&10\$  Hendryx Bronze: 700, 800 series 40&10\$  Calipers—See Compasses. Calks. Toe and Hee! Blunt. 1 prong per lb. 34@4c  Sharp. 1 prong per lb. 44@4½c  Perkins' Blunt \$\mathbf{B}\$ 5 \$\mathref{S}\$  Can Openers—See Openers, Can                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|   | Calipers—See Compasses.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|   | Blunt. 1 prongper lb. 3%@4c                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|   | Perkins' Blunt                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|   | Can Openers See Openers, Can                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|   | Cans, Milk-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|   | Cans, MIR-5  Blinois Pattern. \$1 75 2.10 2.25 each, lowa Pattern 2.40 2.60 each, Buffalo Pattern 2.30 3.50 each, low York Patt'rn 2.50 2.55 3.40 each, Baitmore Patt'ra 2.50 2.55 3.10 each.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|   | New York Patt'rn3.00 3.25 3.40 each.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|   | Cans, Oil-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|   | Baitmore Pattrn2.50 2.85 3.10 each.  Cans. Oil— Gaivanized Blue Band, 1-gal., \$\pi\$ doz.  Buffalo Family Oil Cans:  \$1.60@\$1.75                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|   | 3 5 10 gal.<br>\$48.00 60.00 108 gro.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|   | Caps—Percussion—                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|   | G. Dper M 33@34c                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|   | G. E                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|   | Buffalo Family Oil Cans: \$1.50cgs1.75 \$48.00 80.00 108 aro.  Caps—Percussion— Eley's E. B                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|   | B. L. Caps (Sturtevant Shells)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|   | \$1.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|   | -,                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

Novem

Cimle Nail. Meth Spike, Me Spike, We Spike, We

Class

Jobb small lot: Single ! Double 10% to b

Glue Last A, B List B. C List C. C Clue Grea Common Dixon's I Dixon's I

Snow Fla

Grin Gua

Gur Ha Hat

Peg Po Peg Po Sewin Saddl Peg, C Brad,

Cover Cover Cover Cover Cover Cover Cover Cover

H

Helle Helle Magr \$1. Pocs Fuye Fuye En Ma Ri Sarg

S lb S to Ove Wi

Al Bh

| Cornet Contain                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Clanners Walk                                                                                                                                                                                            | Enterprise 25@254714                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | % Kegs lb. 5 c 5 bc 5 c                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| See Stretchers, Carpet.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Cleaners Walk—<br>Star Socket, All Steel                                                                                                                                                                 | Enterprise                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 10-lb cans, 10<br>in case 6 c 65c                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Cartridges—                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Star Shank, All Steel @ doz. \$3.75 net<br>W. & C. Shank, All t el, 7½ in. @ d.z.,<br>\$3.35; S in., \$3.40; 8½ in., \$3.50.                                                                             | Nos. 1 2 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | in case 6 c 614c 10-lb.cans.less                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| B. B. Caps, Con., Ball Swgd \$1.90                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | \$3.35; 8 in., \$3.40; 8½ iu., \$3.50.<br>Cleavers, Butchers'-                                                                                                                                           | Hale's, # doz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | than 1010 c 10 c 8 c                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Blank Carridges: 32 C. F., \$5 50                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Cite 19675, But Cirio 3 90%<br>New Havea Edge Tool Co.'s 40&105<br>Nichols Bros., Flat hdl., 304; Rd. hdl., -05<br>Fayette R. Plumb. 335,2335,2105<br>P. S. & W. 335,256,2335,2105<br>& L. J. White. 355 | Home No. 1 \$27.00 \$33.00 \$45.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Ware—See Ware, Hollow.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 32 C. F., \$5 50                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Fayette R, Plumb                                                                                                                                                                                         | Little Glant, # dos. \$26.0050&10%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | See Pins. Escutcheon.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 22 cal. Rim, \$1.50                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | P. S & W                                                                                                                                                                                                 | Nos. 305 310 312 320 322<br>\$35.00 \$48.00 \$44.00 \$72.00 \$68.00<br>Sterling 334655                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Extractors, Lemon Julce                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Clippers-                                                                                                                                                                                                | Sterling 133/485%<br>Nos 1 Each \$2.00 \$2.50<br>Miles' Challenge, # doz 45@45&10%<br>Nos 2.50                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | -See Squeezers, Lemon.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Rim Fire Sparting                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Handy Tollet # doz . \$3,40  Mascotte Tollet # doz . \$3,40  Monitor Tollet # doz . \$3,00                                                                                                               | Miles' Challenge, ₹ doz45@45&10%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Zimmerman's                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Rim Fire, Military                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Stewart & Patent & doz. \$10.00                                                                                                                                                                          | \$22.00 \$30.00 \$40.00<br>New Triumph No. 605. \$2 doz. \$24.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Faucets-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Bed 70@70&10%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Clips, Axle-                                                                                                                                                                                             | New Triumph No. 605, # doz. \$24.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Metallic Key, Leather Lined                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Plate                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Eagle and Superior 4 and 5-16 inch                                                                                                                                                                       | Woodruff's,   doz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Red Cedar                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Ross Anti-Friction Furniture, 70&105  Boss Anti-Friction Furniture, 70&105  Payson's Anti-Friction Furniture, 70&105                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Norway, 14 and 5-16 inch., 70@71-&10% Cloth and Netting, Wire                                                                                                                                            | Chadborn's Smoked Beer Cutter, & doz.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | B. & L. B. Co.: West's Lock, Open and Shut Key 50 & 105 John Sommer's Paerless Tin W.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Payson's Anti-friction Furniture.70&105                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | -See Wire, &c.                                                                                                                                                                                           | Enterprise Beef Shavers                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | West's Lock, Open and Shut Key50&10g John Sommer's Peerless Tin Key. 40g John Sommer's Boss Tin Key. 50g John Sommer's West Vision West Vi |
| Payson's Anti-Friction Truck                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Cocks, Brass-<br>Hardware list (Globe, Kerosene,                                                                                                                                                         | Henry Disston & Sons:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | John Sommer's Victor Metal Key 50& 104                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Cattle Leaders-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Lever Bibbs, Racking, &c.)                                                                                                                                                                               | Henry Disston & Sons: Slaw, Corn Grater, &c                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| See Leaders, Cattle.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Coffee Mills—See Mills, Coffee.                                                                                                                                                                          | Tucker & Dorsey Mfg. Co.:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | John Sommer's I. X. L. Cork Lined 504<br>John Sommer's Reliable Cork Lined 504<br>John Sommer's Common Cork Lined 504                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| American Coil. Full Casks:  3 16 4 5-16 % 7-16 6 9-16                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Brass, Pope & Stevens' list                                                                                                                                                                              | Tucker & Dorsey Mrg. Co.;<br>  Kraut Cutters                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | John Sommer's Chicago Cork Lined. 808                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 7.25 5.36 4.35 5.50 3.35 3.25 3.15<br>% 34 36 to 114 inch.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Embossed, Glit, Pope & Stevens' list 30 & 10%  <br>Leather Pope & Stevens' list 40%                                                                                                                      | Slaw Cutters, 1 Knife, # gr\$18@\$20<br>Slaw Cutters, 2 Knife, # gr\$22@\$36<br>Tobacco—                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | John Sommer's O. K. Cork Lined 50%<br>John Sommer's Perfection Cedar 40%<br>Star 600@800.55                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 3.10 3.05 3.00 cents per lb.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Compasses, Dividers, &c.                                                                                                                                                                                 | Tobacco— All Iron, Cheapdoz. \$4.25@\$4.50 Enterprise25@30\$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Star, Metal Plug new list40@40&54<br>Lockport, Matal Plug list40@40&54                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Less than Cask lots add 40c per 100lbs.<br>German Coil, list July \$4, '97.60 & 10 & 10%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Ordinary Goods                                                                                                                                                                                           | Enterprise                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Star. Metal Plug new list. 00@60%55 Star. Metal Plug new list. 40@40%55 Lockport, Metal Plug, reduced list. 60&56 McKenna, Brass: Burglar Proof, N. P                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| German Halter Chain, list July 24,                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Dividers                                                                                                                                                                                                 | Sargent's, \$\psi\$ doz. \$24.00502102105<br>Washer— Appleton's, \$\psi\$ doz. \$18.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Improved, % and % inch                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Traces, Western Standard: 100 pair                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Calipers, Double                                                                                                                                                                                         | 50&10&10\$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Enterprise P dos. \$38.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 64-6-3, Straight, with ring\$26.00<br>64-6-8, Straight, with ring\$27.00<br>64-8-8, Straight, with ring\$31.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | J. Stevens A. & T. Co                                                                                                                                                                                    | Donney 8 # doz. \$4.70                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | National Measuring, # dos. \$66.0040%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 6%—8-1. Straight, with ring. \$31.00<br>6%—10-2. Straight, with ring. \$35.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | nized-                                                                                                                                                                                                   | Diggers, Post Hole, &c<br>Dalbey Post Hole Augerper doz. \$10.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | See Plates, Felloe.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Add 2¢ per pair for Hooks.<br>Twist Traces 2¢ per pair higher than<br>Straight Link.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Carload. L. C. L. Territory. Loose. Nested.                                                                                                                                                              | Iwan's Improved Post Hole Auger40%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | List revised Nov. 1, 1899.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Trace, Wagon and Fancy Chains.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Eastern6)&25&5% 60&20&216%<br>Central60&25&25/2% 60&17/2%                                                                                                                                                | Iwan's Perfection Post Hole Digger  \$\phi\$ doz. \$9.00  Kohler's Universal                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | List revised Nov. 1, 1899.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| list April, '98                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Southern. 60&20&5% 60&15%<br>S. Western. 60&20% 60&13%                                                                                                                                                   | Kohler's Universal P doz. \$14,00 Kohler's Little Glant                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Best Brands                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Iron                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | S. Western. 60&20% 60&121/4%<br>Terms. 2% for cash.                                                                                                                                                      | Kohler's Rival                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Second Quality 80 & 10 @ 80 & 85%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Safety Chain                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | See also Eave Trough. Coolers, Water—                                                                                                                                                                    | Kohler's Invincible. \$\pi\$ doz. \$12.00 Kohler's Rival. \$\pi\$ doz. \$5.00 Kohler's Ploner. \$\pi\$ doz. \$5.00 Never Break Post Hole Diggers, \$\pi\$ doz.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Imported— Stube' Tapers, Stube' list, July 15.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Covert Sad. Works: Breast, Hitching and Rein Chains508                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Nos 3 4 6<br>Labrador \$11,50 \$14.00 \$17.50 \$20,00                                                                                                                                                    | Samson, # dos. \$34.0025%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 97                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Covert Mfg. Co :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 8 gat.                                                                                                                                                                                                   | Dividers—See Compasses.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Net Prices: Grindstone-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Heat                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Not 3 4 6 8<br>Iceland \$23.00 \$25.00 \$39,00 \$37,50                                                                                                                                                   | Dog Collars—See Collars, Dog. Door Checks—                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Inch 15 17 19 21 24<br>Per doz. \$2.90 3.10 3.30 3.80 4.60                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 1(610                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | \$57.00 \$72.00                                                                                                                                                                                          | See Checks. Door.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Stowell's Giant Grind stone Hanger                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Stallion                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | See Tools, Coopers'.                                                                                                                                                                                     | Door Springs-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Ningara Colland Halters 60@60&5%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 0                                                                                                                                                                                                        | See Springs, Door.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Stowell's Grindstone Fixtures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Niagara Cow Ties                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Braided, Drablb. #5c<br>Braided, White, Common, lb171/@18c                                                                                                                                               | Drawers, Money—<br>Tucker's Pat. Alarm Tili No. 1, # doz.<br>\$18: No. 2, \$15 No. 3, \$14: No. 4, \$18                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Fluting Machines-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Wire Goods Co.;                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Common India                                                                                                                                                                                             | Drawing Knives-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | rodder aqueezers-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Dog Chain                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Common India                                                                                                                                                                                             | See Knives. Drawing.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | See Squeszers, Fodder.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Carpenters', Bluegro. 45c                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Cable Laid Russia                                                                                                                                                                                        | Drills and Drill Stocks-<br>Common Blucksmiths' Drilleach                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Sept. 1, 1900, list.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Carpenters', Redgro. 402<br>Carpenters', Whitegro. 35c                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | India Hemp, Braidedlb 114@15c                                                                                                                                                                            | \$1.75@\$2.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Grain or Barley Forks, 16 to 20 inches                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Chalk Lines -See Lines.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Patent India                                                                                                                                                                                             | Blacksmiths' Self-feedingeach  83.75@4.00  Bench Drills Stearns'                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Hay, \$ tine                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Checks, Door-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Massachusetts, Dab b 22%                                                                                                                                                                                 | Breast, Millers Falls, each \$3.00 .15&104                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Hay, 4 tine. Header and Barley                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Dandelevie 408105                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Eddystone Braided Cotton 5 196 Harmony Cable Laid Italian 5 186                                                                                                                                          | Goodell Automatic Drills 40&5@40&104                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Manure, 4 tine                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Columbia 50&105 Ecilpse 60@60&105 Chests, Tool American Tool Chest Co.:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Man mony Caolo Laid Italian w m 104                                                                                                                                                                      | 1 to a second se |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Braided, Giant, White                                                                                                                                                                                    | Ratchet, Curtis & Curt's                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Iowa Dig-Ezy Potato                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Youths' Chests, with Tools                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Cable Laid Italian                                                                                                                                                                                       | Ratchet, Whitney's, P. S. & W. 402104                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Victor, Hay                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Farmers', Carpenters', etc., Chests, with Tools                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Cable Laid India                                                                                                                                                                                         | Whitney's Hand Drill, No. 1, \$10.00;                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Champion, Hay                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Machinists' and Pipe Fitters' Chests,<br>Empty. 50%<br>C. E. Jennings & Co.'s Machinists' Tool                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Phoenix, White                                                                                                                                                                                           | Adjustable, No. 10, \$12.00\$3143  Twist Drills—                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Columbia, Hay                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Chests                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Braided, Italian Hemp 3246                                                                                                                                                                               | Standard List 60@60&10%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Chiseis-<br>Socket Framing and Firmer                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Braided, Linen                                                                                                                                                                                           | Drill Bits or Bit Stock Drills-See Augers and Bits.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | \$5.00; 6 tine, \$6.00.<br>W. & C. Potato Digger.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Standard List 70&5@ 70&106                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | A quality, Drab, 40¢                                                                                                                                                                                     | Drill Chucks—See Chucks.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Acme Manure60&255                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Buck Bros                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | A quality, White, 35¢                                                                                                                                                                                    | Dripping Pans-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Jakota Header                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| C. E. Jennings & Co. Socket Framing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Lipen, 57%6 15%                                                                                                                                                                                          | Drivers, Screw-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Kansas Header                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| No. 1560&10\$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Wire Dicture                                                                                                                                                                                             | Balany's Screw Holder and Driver # 405                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | # doz., \$5.00; 5 tine, \$6.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Swan's                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Braided or Twisted,<br>See Trade Report.                                                                                                                                                                 | 2% inch, \$6; 4-in., \$7.50 8-in., \$9.40%<br>Buck Bros                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Frames-Saw-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Tanged Firmers40d5@40&10\$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Corn Knives and Cutters                                                                                                                                                                                  | Buck Bros Screw Driver Bits                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Red. Polished and Varnished dos.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Buck Bros. 30%<br>Charles Buck 30%<br>C. E. Jennings & Co. Nos. 191, 181. 25%<br>U. & I. J. White, Tanged 35&5%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                          | Douglass Mfg. Co                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | #1.15@#1.50<br>Whitedox.75@800                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Cold-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Crackers, Nut-                                                                                                                                                                                           | Goodell's Automatic                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Soo Screens                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Cold Chisels, good quality.lb. 14@16c                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Little Giant                                                                                                                                                                                             | 50&10&10@50&10&10&5%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Freezers, Ice Cream-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Cold Chisels, fair qualitylb. 12c<br>Cold Chisels, ordinarylb. 8@9c                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Cradles-                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Chucks— Beach Pat., each \$8.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | White Round Crayons, gross, 54 asc                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Skinner Patent Chucks: Combination Lathe Chucks40% Drill Chucks, Patent and Standard30%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                          | Screw Driver Bits doz. 50@70¢                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Fair.\$1.00 1.10 130 1.75 2.30 1.90 Fruit and Jelly Presses                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Drill Chucks, Patent and Standard30% Drill Chucks, New Model 25% Independent Lathe Chucks                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | D. M. Steward Mfg. Co.                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | I See Presses. Frum thus Jenu.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Universal Lathe Chucks 40%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Soapstone Pencils, round, flat or square gr.\$1.50 Rolling Mill Crayonsgr.\$2.50                                                                                                                         | No. 86                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Fry Pans-See Pans, Fry.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Face Plate Jaws                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                          | At some and a second se | Hemp Fuse                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Standard Tool Co.:<br>Improved Drill Chuck45%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | See also Chalk. Creamery Pails—See Pails.                                                                                                                                                                | Eave Trough, Calvanized                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Cotton Fuse                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Union Mfg. Co.:<br>Combination                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Creamery Pails—See Pails.                                                                                                                                                                                | Territory. Carload. L. C. L.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Single Taped Fuse                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Czar Drill                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Crooks, Shepherds'— Fort Madison, Heavy # dos. \$7.00                                                                                                                                                    | Central                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Triple Taped Fuse                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Union Drill                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                          | Terms, 2% for cash.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Gates, Molasses and Oil-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Vniversal40%<br>Face Plate Jaws                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Crow Bars - See Bars, Crow. Cultivators - Victor Garden                                                                                                                                                  | See also Conductor Pipe.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Stebbins'                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Clamps-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Cuttore Glace \$10.00                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Gauges-<br>Marking, Mortise, &c                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Adjustable, Stearus' 305 Adjustable, Stearus' 305 Cabinet, Sargent's 45&106 Carriage Makers' P., S. & W. Co. 40&106 Carriage Makers' Sargent's 50&106 Carriage Makers' Sargent's | Smith & Heminway Co30%  Meat—                                                                                                                                                                            | Eco Onenere-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 55&10@58&10&10\$  Barrett's Comb. Roller Gauge                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Carriage Makers' Sargent's 50&10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | American                                                                                                                                                                                                 | Emory, Turkish-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| man's Udea Dr p Forge & Tool                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Each\$5 \$7 \$10 \$25 \$50 \$60 Connecticut:                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | General #0.8-10%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Saw Clum, s -e Vive Suo Filera, 405                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | No 0 1 8 10 12<br>Lach\$1.75 2.25 3.00 3.00 3.50                                                                                                                                                         | Kegslb. 4'4c 5 c 3 c                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Wire P. S. & W. Co10&10.56                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 0.00                                                                                                                                                                                                     | 0.40                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

|                                                                                                                                     | THE                                              | IKO                              | N               |
|-------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|----------------------------------|-----------------|
| O1 W-1                                                                                                                              | h.                                               | 1                                | Ent             |
| Cleaners Wai<br>Star Socket, All Steel<br>Star Shank, All Steel<br>W. & C. Suauk, All t el<br>\$3.35; 8 in., \$3.40; 8½             | e dos. \$4.0<br>e dos. \$3.7<br>756 in. € d      | 00 net                           | N<br>E<br>Dix   |
| \$3.35; 8 in., \$3.40; 85;<br>Cleavers, Buto                                                                                        | hers'-                                           | 80%                              | Hal             |
| Foster Bros. New Haven Edge Tool ( Nichols Bros., Flat hdl., S Fayette R. Plumb. P. S & W                                           | o.'s. 40<br>305; Rd. hd<br>33563335<br>356339    | 10%<br>5&10%<br>6&10%            | Ho<br>Lit       |
| Clippers-                                                                                                                           | Company                                          |                                  | Ste<br>N<br>E   |
| Mascotte Toilet<br>Monitor Toilet<br>Stewart & Patent                                                                               | 29 dos                                           | 3,40<br>\$9,00<br>10,00          | Mil<br>Ne       |
| Clips, Axle— Eagle and Superior inch Norway, ¼ and 5-16 in Cloth and Net                                                            | 4 and                                            | 5-16<br>0d:10%                   | Wo              |
| -See Wire, &c.                                                                                                                      |                                                  | - 1                              | Chi             |
| Cocks, Brass-<br>Hardware list (Glob<br>Lever Bibbs, Rackin                                                                         | 1g, œc.)                                         | a A sor                          | He              |
| Coffee Mills—S<br>Collars Dog—<br>Brass, Pope & Stevens' I<br>Embossed, Glit, Pope & Steven                                         | ee Mills, C                                      | offee40%                         | Tu              |
| Leather Pope & Steven Compasses, D Ordinary Goods Bemis & Call Hdw. & To                                                            | evens'lists<br>s' list<br>ividers,               | 40%                              | Al              |
| Dividers                                                                                                                            |                                                  | 00%                              | En<br>Na<br>Sai |
| Calipers, Califeratenicalipers, Double Calipers, Inside or Ou Calipers, Wing Compasses J. Stevens A. & T. Co Conductor Pl           | tside                                            | 65%<br>60%<br>50%                | Bo              |
| Conductor Pinized— Carload Territory. Loose.                                                                                        |                                                  |                                  | Da<br>Iw        |
| Eastern6)&25&2<br>Central60&25&2<br>Southern 60&20&                                                                                 | % 60d20<br>% 60d21                               | 15%                              | Ko<br>Ko        |
| S. Western. 60@20%<br>Terms. 2% for cash.<br>See also Eave Tro<br>Coolers, Wate                                                     | 60&1                                             | 274%                             | Ko<br>Ko<br>Ne  |
| Labrador \$11.50 \$14.00<br>8 gat.                                                                                                  | 4                                                | 6,00                             | Sa              |
| \$25.00<br>Nos 3<br>Iceland. \$23.00 \$25.00<br>10 14 gal.<br>\$57.00 \$72.00                                                       | \$30,00 \$5                                      | 8 7.50                           | 1               |
| See Tools, Coopera                                                                                                                  | l'.                                              |                                  | -               |
| Braided, Drab<br>Braided, White, Comi                                                                                               | mon, lb173<br>lb. A, 18c;                        | 1b. 15c<br>18c<br>18c<br>16c     | Tu              |
| Common India<br>Cotton Sash Cord, Ti<br>Patent Russia<br>Cable Laid Pussia<br>India Hemp, Braided<br>India Hemp                     | visted 1<br>lb . 12<br>lb . 18                   | 2@16c<br>@13c<br>2@14c           | Co              |
| India Hemp. Patent India Pearl Braided, cotton. Massachusetts, White. Massachusetts, Dah, Eddystone Braided Cot                     | lb. 1                                            | 0@12c<br>0@12c                   | Bl              |
| Harmony Cable Laid It                                                                                                               | ton                                              | 28566<br>28566<br>3 196<br>3 186 | Br<br>Br<br>Go  |
| Crown, Solid Braided<br>Braided, Giant, White                                                                                       | White                                            | D 18¢<br>D 17¢                   | Jo<br>Ra<br>Ra  |
| Cable Laid Italian<br>Cable Laid Russian<br>Cable Laid India<br>Braided India.<br>Phœnix, White                                     |                                                  | 16¢<br>14¢<br>12¢<br>18¢         | Ra<br>Ra<br>W   |
| Braided, Drab Cotton<br>Braided, Italian Hem<br>Braided, Linen<br>Braided, White Cotto<br>Silver Lake                               |                                                  |                                  | St              |
| Silver Lake: A quality, Drab, 40¢. A quality, White, 35¢                                                                            | a, spot. # 1                                     | 15%                              |                 |
| Silver Lake: A quality, Drab, 40¢. A quality, White, 35¢ B quality, Drab, 35¢. B quality, White, 30¢ Italian Hemp, 40¢. Linen, 57½. | ************                                     | 15%                              | -               |
| Braided or Twisted,<br>See Trade Report.                                                                                            | ture-                                            |                                  | Bi              |
| See Knives, Con<br>Corn Planter                                                                                                     | rn.                                              | tters                            | Cl<br>De<br>Fi  |
| See Planters, Cor<br>Crackers, Nu<br>Little Giant<br>Cradles—                                                                       | t-<br>¥ gr                                       | r. <b>\$34.</b> 00               | M               |
| Crayons-                                                                                                                            | 200 00000 1                                      | 11/00-                           | NS              |
| D. M. Steward Mfg. Co<br>Metal Workers' Cray                                                                                        | ons.gr. \$2.5                                    | ory.                             | St              |
| Rolling Will Crayons                                                                                                                | gr.81.5<br>gr. 82.5<br>(compo-,<br>on) gc. \$2.6 | 10 Se 10                         | 81              |
| Creamery Pa<br>Creamery,<br>Crooks, Shep<br>Fort Madison, Heavy                                                                     | herds'-                                          | Pails,                           |                 |
| Crow Bars -Se                                                                                                                       | e Bars, Or                                       | 87.00<br>E. \$6.50               |                 |
| Cultivators Victor Garden Cutters Smith & Heminway Co                                                                               | Glass-                                           | \$10.00                          | E               |
| American                                                                                                                            | -                                                | 904                              |                 |
| No 0 1                                                                                                                              | N 10                                             | 12                               | E               |

| 1    | N AGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|      | Cuterprise                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|      | Dixon's, \$\psi\ doz \ 2 3 \ Nos. \ \frac{3}{12.00} \ \$14.00 \$17.00 \$19.00 \$30.00 \ lale's, \$\psi\ doz \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 1    | Home No. 1, % dog. \$26.0050&10%<br>Attle Glant, % dog33\\\\\\\\\\\\\\\\\\\\\\\\\\                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 8    | \$88.00 \$48.00 \$44.00 \$73.00 \$68.00 \$18erling. \$3354.55 \$Nos \$2.00 \$2.50 \$10s \$10s \$2.50 |
| 20   | Miles' Challenge, \$\pi doz \docs \do                                                                                                                                                                                                                                                                                                                                                                                |
| 1    | Woodruff's W dos 40%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|      | Chadborn's Smoked Beef Cutter, \$\forall doz. \$60.00<br>Enterprise Beef Shavers                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 1    | Slaw and Kraut— Henry Disston & Sons: Slaw, Corn Grater, &c                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 7    | Slaw, Corn Grater, &c                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|      | Tucker & Dorsey Mfg. Co.: Kraut Cutters. 1 Knife, # gr\$18\\$22@\$36  Tobacco—  Tobacco—                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1179 | All Iron, Cheapdoz. \$4.25@\$4.50<br>Enterprise                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|      | Appleton's, \$ doz. \$16.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 1    | Diggers, Post Hole, &c                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|      | Dalbey Post Hole Augerber doz .\$10.00   wan's Improved Post Hole Auger 40%   wan's Perfection Post Hole Digger \$\pi\$ doz. \$\pi\$.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 1    | Kohler's Universal P doz. \$14,00<br>Kohler's Little Giant P doz. \$15,00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|      | Kohler's Universal. \$\frac{1}{3} \dots, \frac{1}{3}                                                                                                                                                                                                                                                                                                                                                                                |
|      | Kohler's Rival \$\psi_0.00\$  Kohler's Pioneer. \$\psi_0.00\$  Kohler's Pioneer. \$\psi_0.00\$  Never-Break Post Hole Diggers, \$\psi_0.00\$  \$                                                                  |
|      | Dividers—See Compasses. Dog Collars—See Collars, Dog.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|      | See Checks, Door.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|      | See Springs, Door.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|      | Drawers, Money—<br>Tucker's Pat. Alarm Till No. 1, # doz.<br>\$18; No. 2, \$15 No. 3, \$14; No. 4, \$18.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|      | See Knives. Drawing.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|      | Drills and Drill Stocks—<br>Common Blacksmiths' Drilleach<br>\$1.75@\$2.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 1    | Blacksmiths' Self-feedingeach                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|      | Breast, Millers Falls, each \$3.00 .15&10\$<br>Breast, P., S. & W30@30&10\$<br>Goodell Automatic Drills40&5@40&10\$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| -    | Johnson's Automa le Dritis Nos. 2 and S 16845 Johnson's Drill Points                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| -    | Ratchet, Parker's                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|      | Adjustable, No. 10, \$12.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|      | Standard List 60@60&10%  Drill Bits or Bit Stock  Drills—See Augers and Bits.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|      | Drill Chucks-See Chucks.<br>Dripping Pans-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|      | See Pans, Dripping. Drivers, Screw-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| -    | Balsey's Screw Holder and Driver, \$ doz. 25-inch, \$6; 4-in., \$7.50 \$-in., \$0.405 Buck Bros. 303 Buck Bros' Screw Driver Bits. 37:56                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|      | Buck Bros Screw Driver Bits 27-55<br>Champion Douglass Mfg. Co. 20-620&10&<br>Fray's Hol. H'dle Sets, No. 3, \$12.00 505<br>Gay & Parsons' Ratchet 355<br>Goodell's Automatic 50&10&10&50&10&10&55                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|      | Gay & Parsons' Ratchet                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|      | Mayhew's Black Handle                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| -    | Nos. 20 and 40                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|      | No. 64, Varnished Handles                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| -    | Nos. 65 to 68                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| -    | Eave Irough, Carload, L. C. L. Eastern                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|      | Southern75&10\$ 75&5%<br>S. Western75&2½\$ 75%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|      | F                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|      | See also Conductor Pipe.  Egg Benters—See Beaters, Egg.  Egg Openers— See Openers.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

| _                    | 3, 2000                                                                                                                                                                                                                                                                                                      |
|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12<br>16             | % Kegslb. 5 c 51/2c 5/2c                                                                                                                                                                                                                                                                                     |
| 00                   | in case 6 c 64c 4c 10-lb.cans.less than 10 10 c 10 c 8 c                                                                                                                                                                                                                                                     |
| 5%                   | than 10 10 c 10 c 8 c  Enameled and Tinned Ware-See Ware, Hollow.                                                                                                                                                                                                                                            |
| 0%<br>5%<br>2<br>00  | Escutcheon Pins—<br>See Pins, Escutcheon.<br>Extractors, Lemon Juice<br>—See Squeeze's, Lemon.                                                                                                                                                                                                               |
| 5%                   | Fasteners Blind-                                                                                                                                                                                                                                                                                             |
| 00                   | Zimmerman's50&10s                                                                                                                                                                                                                                                                                            |
| 5%                   | Metallic Key, Leather Lined.                                                                                                                                                                                                                                                                                 |
| 00<br>0z.<br>00      | Red Cedar                                                                                                                                                                                                                                                                                                    |
| 0%                   | Ret Cedar 500,50458 B. & L. B. Co.: West's Lock, Open and Shut Key 508,108 John Sommer's Peerless Tin Key 408 John Sommer's Boss Tin Key 508 John Sommer's Bottor Metal Key 508,108 John Sommer's Duplex Metal Key 808 John Sommer's Duplex Metal Key 808 John Sommer's Duplex Metal Key 808                 |
| 0%<br>5%<br>0%       | John Sommer's Duplex Metal Key607<br>John Sommer's Diamond Lock                                                                                                                                                                                                                                              |
| OK.                  | John Sommer's Common Cork Lined, 70%<br>John Sommer's Chicago Cork Lined, 70%                                                                                                                                                                                                                                |
| 20<br>36             | John Sommer's Common Cork Lined, 705<br>John Sommer's Chicago Cork Lined, .605<br>John Sommer's O. K. Cork Lined 505<br>John Sommer's Perfection Cedar .405<br>Star 60@60@55                                                                                                                                 |
| 50<br>0%<br>0%       | Star. Metal Plug new list. 4064025<br>Star. Metal Plug new list. 4064025<br>Lockport, Metal Plug, reduced list.0025<br>McKenna, Brass:<br>Burglar Proof, N. P. 35<br>Improved, 4 and ½ inch. 35                                                                                                              |
|                      | Improved, % and % inch                                                                                                                                                                                                                                                                                       |
| 0%<br>75             | Self Measuring: Enterprise, \$\Phi\$ doz. \$36.00                                                                                                                                                                                                                                                            |
| 00                   | Felice Plates— See Plates, Fellos. Files—Domestic— List revised Nov. 1, 1899.                                                                                                                                                                                                                                |
| 00                   | List revised Nov. 1, 1899.  Best Brands                                                                                                                                                                                                                                                                      |
| 00<br>00<br>00<br>00 | 2000114 Quatery                                                                                                                                                                                                                                                                                              |
| 0%                   | Imported— Stube' Tapers, Stube' list, July 15.  '97                                                                                                                                                                                                                                                          |
| 15%                  | Fixtures, Grindstone-                                                                                                                                                                                                                                                                                        |
| g.                   | Inch 15 17 19 21 24<br>Per doz. \$2,90 3.10 3.30 3,80 4,60<br>Stowell's Giant Grind stone Hanger                                                                                                                                                                                                             |
|                      |                                                                                                                                                                                                                                                                                                              |
|                      | Stowell's Grindstone Fixtures                                                                                                                                                                                                                                                                                |
| 18.                  | Fodder Squeezers—<br>see Squeezers, Fodder.                                                                                                                                                                                                                                                                  |
|                      | Sept. 1, 1900, list.                                                                                                                                                                                                                                                                                         |
| .00                  | Grain or Barley Forks, 16 to 20 inches                                                                                                                                                                                                                                                                       |
| 00.00                | inches                                                                                                                                                                                                                                                                                                       |
| 0%                   | Manure, 5 tine                                                                                                                                                                                                                                                                                               |
| 10%<br>10%           |                                                                                                                                                                                                                                                                                                              |
| 0%                   | Iowa Dig Ezy Potato         .855           Victor, Hay         .86%           Victor, Manure         .70%           Victor, Header         .60&3/5           Champion, Hay         .68%           Champion, Manure         .70%           Columbia, Hay         .68%           Columbia, Manure         .70% |
| 10%                  | Columbia, Hay 66% 55 Columbia, Manure 705 Columbia, Spading 706                                                                                                                                                                                                                                              |
| ck                   | Columbia, Hay                                                                                                                                                                                                                                                                                                |
|                      | Acme Hay                                                                                                                                                                                                                                                                                                     |
|                      | Jackson Steel Barley                                                                                                                                                                                                                                                                                         |
| OR.<br>10%           | Frames-                                                                                                                                                                                                                                                                                                      |
| 101                  | Saw-<br>Red, Polished and Varnisheddos,<br>\$1.15@\$1.30                                                                                                                                                                                                                                                     |
| 50%<br>35%           | Whitedos. 75@800<br>Screens and Frames—<br>See Screens.                                                                                                                                                                                                                                                      |
| 50%<br>10%<br>10%    | Freezers, Ice Cream-                                                                                                                                                                                                                                                                                         |
| 10%                  | Qts\$ 3 4 6 8 10<br>Best.\$1,40 1.60 1.85 \$.50 3.0 3.90<br>Good \$1.25 1.35 1.70 \$.05 2.65 3.50<br>Fair.\$1.00 1.10 1 30 1.75 2.30 \$.90                                                                                                                                                                   |
| 70¢                  | Fruit and Jelly Presses                                                                                                                                                                                                                                                                                      |
| 10%                  | Fry Pans-See Pans, Fry. Fuse- Per 1000 Feet.                                                                                                                                                                                                                                                                 |
| 10%<br>10%           | Hemp Fuse                                                                                                                                                                                                                                                                                                    |
| T. 75                | Single Taped Fuse                                                                                                                                                                                                                                                                                            |
| 6                    | Gates, Molasses and Oll-                                                                                                                                                                                                                                                                                     |
| -                    | Stebbins'                                                                                                                                                                                                                                                                                                    |
| 99.                  | 55 & 10 @ 58 & 10 & 10\$                                                                                                                                                                                                                                                                                     |

| November 8, 1900                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | THE                                                                                                                                                                                                                      |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| To remove of 2000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                          |
| Bandlad Assorted                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Hangers—  Barn Door, New Pattern, R  Groove, Regular: Inch                                                                                                                                                               |
| yal, Wood Handled, gro. \$1.00@4.25 spike, Wood Handled, Assorted gro. \$5.00@5.25 Class, American Window                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Barn Door, New England Path<br>Check Back, Round Groove, I<br>ular:<br>Inch                                                                                                                                              |
| Jobbers' List, Sept. 1, 1990<br>small lots from store:<br>single Strength, all sizes85&2%<br>Double Strength, all sizes.85&25&25<br>195 to be added on all first quality,<br>both Single and Double.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Oscillating Big Twin Chisholm & Moore Mfg. Co.: Baggage Car Door                                                                                                                                                         |
| Glue-Liquid, Fish-<br>List A, Bottles or Cans, with Brush.<br>57/265%<br>List B, Cans (½ pls., pts., qts.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Elevator.<br>Railroad.<br>Coleman Hardware Mfg. Co.;<br>Czar Bail Bearing, ¥ doz. pair §7<br>No. 10 Roller Bearing. doz. pr. 5<br>No. 20 Roller Bearing. doz. pr. 4<br>Nickel.                                           |
| Clue Pots—See Pots, Glue.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Nickel. J. G. C. Sö& Cronk Hanger Co.: 1 008 'Axle Rol' r Bearing                                                                                                                                                        |
| Crease, Axio— rommon Gradegro. \$5.00@6.00 pixon's Everlasting10 b pails, ea. 85 s pixon's Everlasting, in bxs. \$2 doz. 1 b \$1.20; 2 b \$2.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Lane Bros.: Parlor, Standard 8: Parlor, New Model 8: Barn Door, Standard 80& Covered 50&10&10 Special 60& Lawrence Bros.: Advance                                                                                        |
| Snow Flake: 1 qt. cans.per doz. \$2.00; 2 qt., \$3.20; 2 qt., \$3.20; 3 gal. \$24.00; 5 gal. \$24.00  Crindstone Fixtures—                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Lawrence Bros. Advance.  Oleveland. Crown. New York Per-less 60& Sterling McCo. No. 2, Standard, \$18.60& No. 1, Special, \$18.60& Stowell Mfg. and Foundry Co. Badger. Baggage Car Door. Climax Anti-Friction Elevator. |
| See Fixtures. Grindstone.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | No. 2, Standard, \$1860&<br>No. 1, Special, \$1360&                                                                                                                                                                      |
| Guards, Snow— O verand Wire Spring Co.: (Bit's Steel % 1000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Badger                                                                                                                                                                                                                   |
| Cun Powder-See Powder.  Hack Saws-See Saws.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Magic                                                                                                                                                                                                                    |
| Hafts, Awl-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Street Car Door                                                                                                                                                                                                          |
| gro.  Peg Patent, Leather Top. \$4.90\pi.525  Peg Patent, Plain Top. \$3.50\pi.3.75  Swing, Brass Ferrule. \$1.50\pi.1.55  Saddlers', Brass Ferrule. \$1.55\pi.1.55  Peg, Common. \$1.25\pi.1.55                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Zenith for Wood Track                                                                                                                                                                                                    |
| Brad, Common. \$1.50@1.76  Halters and Tios— Covert Mfg. Co., Web                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Cycle Ball Bearing.  Dwarf Ball Bearing.  Ives, Wood Track.  L.T. Roller Bearing                                                                                                                                         |
| Covert's Saddlery Works, 96 list, Web. 1604.105<br>Covert's Saddlery Works, Leather004.105<br>Covert's Saddlery Works, Jute602.55<br>Covert's Saddlery Works, Manila602.55<br>Covert's Saddlery Works, Manila602.55<br>Covert's Saddlery Works, Cotton705                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Baggage Car Door                                                                                                                                                                                                         |
| Hammers  Handled Hammers  Heller's Machinists'                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Wilcox Le Roy Noiseless Bearing. Wilcox New Century50&10                                                                                                                                                                 |
| Fayette R. Plumb: I'lumb, A. E. Nail                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Harness Menders—<br>Harness Snaps—See<br>Hasps—                                                                                                                                                                          |
| 8 Riveting and Tinners'                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | McKinnèy's Perfect Hasp ** do<br>Wrought Hasps, Staples, &c.—<br>Wrought Goods,<br>Hatchets—<br>Best Brands                                                                                                              |
| Heavy Hammers and<br>Sledges—                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Note.—Net prices often made.                                                                                                                                                                                             |
| \$ lb. and underlb. 45c   \$1 to 5 lblb. 35c   \$80 & \$6.50 \\ Over 5 lblb. 30c   \$0.00 \\ Wilkinson's Smiths'9\4c@10c lb.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Hay and Straw Kn<br>See Knives.<br>Hingos—<br>Blind and Shutter Hin<br>Surface Gravity Locking Blin                                                                                                                      |
| Handcuffs and Leg Irons                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | (Victor; National; 1868                                                                                                                                                                                                  |
| Handles-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Tip; Buffalo.) No                                                                                                                                                                                                        |
| Agricultural Tool Handles—<br>Hos Rake, Fork. &c                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | (L. & P., O. S., Dixie, &c.)                                                                                                                                                                                             |
| Cross-Cut Saw Handles-  Atkins'                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | No                                                                                                                                                                                                                       |
| Mechanics' Tool Handles-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 2, for Wood, \$9.00; No. 3, for                                                                                                                                                                                          |
| Auger, assortedgro. \$2.40@\$2.60<br>Auger, largegro. \$2.85.65.00<br>Brad Avtgro. \$1.50@\$1.71<br>Chisel Handles:<br>Apple Tanged Firmer, gro. ass'd.<br>\$2.25@\$2.35; large, \$2.50@\$2.60                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Reading's Gravity Sargent's, Nos. 1, 3, 5 Sargent's, Nos. 1, 1 & 13. Welchtsville Eldware Co.                                                                                                                            |
| Apple Tanged Firmer, gro. ass'd. \$2.26\tilde{8}.35; large, \$2.50\tilde{8}.35; large, \$2.50\tilde{8}.25.60\tilde{8}.35; large, \$2.50\tilde{8}.25.60; large, \$2.55\tilde{8}.35.60; large, \$2.55\tilde{8}.35.60; large, \$2.00\tilde{8}.25.60; large, \$2.00\tilde{8}.25.60; large, \$2.00\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60\tilde{8}.25.60 | Shepard's Noiseless, Nos. 80, 60 Niagara, Gravity Locking, Nos.                                                                                                                                                          |
| Hickory Socket Framing gro. ass'd<br>\$2.50@\$2.75; large, \$2.65@\$2.8;<br>File, assortedgro. \$1.00@\$1.1.<br>Hummer, Hatchet, Aze. &c                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Tip Pat'n, Nos. 1, 3 & 5 Buffalo Gravity Locking, Nos. 5 Shepard's Double Locking, Nos. 6 Champlon Gravity Locking, Nos. 25 Champlon Gravity Locking, Nos. 1                                                             |
| Jack, doz. 25@25c; Jack Bolted                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | becamboat dravity Locking, A                                                                                                                                                                                             |
| Fore, doz. 35@38c; Fore, Bolted 79@75                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | W. H Co.'s Mortise Gravity Le                                                                                                                                                                                            |

| THE IR                                                                                                                                                                                                                                           | ON AGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 53                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Hangers—  arn Door, New Pattern, Round Groove, Regular: Inch                                                                                                                                                                                     | Stanley's Steel Gravity Blind Hinges, # doz. sets \$1.20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Coat and Hat, Stowell's                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| ### ### ### ### ### ### ### ### ### ##                                                                                                                                                                                                           | Chicago Spring Butt Co.: Chicago                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Box, or Case, Octagon Steel  Cotton                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Interstate                                                                                                                                                                                                                                       | Payson Mig. Co.: Oblique, Dbl. Acting                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Mrs. Potts, per set:  Nos. 50 55 65 73c 69c 82c 79c  New England Pressing, b 3\\(^{\text{2}}\)_{\text{3}}\) 3\(^{\text{2}}\) 50dering -  Soldering Coppers, 1 & 1\(^{\text{4}}\)_{\text{5}}\) b., 19 @ 21c  Covert Mfg. Co. 25c., 2 b., 19 @ 21c  Pinking Irons. doz. 50\(^{\text{8}}\) 60c  Jack Screws—See Screws,  Jacks, Wagon—  Covert Mfg. Co. Steel. 45\(^{\text{2}}\)_{\text{5}}\  Lockport. 40\(^{\text{4}}\)_{\text{4}}\) 40\(^{\text{4}}\)_{\text{5}}\) (10c  Victor. 60\(^{\text{5}}\)  Kettles— |
| Wilcox Trolley Bail Bearing 40%    Harness Menders See Harness Snaps See Snaps Hasps Mender Mender Hasps Mender Mender Mrought Hasps, Staples, &c. See Wrought Goods. Hatchets Beat Brands 50¢ 10¢ 10¢ 50 60 60 60 60 60 60 60 60 60 60 60 60 60 | Galv. Open\$105 1.70 1.85 1.85 2.65 2.00 Jap. Open\$1.55 1.70 1.85 2.05 2.00 Jap. Open\$1.55 1.70 1.85 2.05 2.00 Galv. Fun el.\$2.75 2.90 3.10 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.00 3.45 2.0 | Enameied and Cast from See Ware, Hollow.  Knife Sharpeners, Knife.  Knives See See See See See See See See See S                                                                                                                                                                                                                                  |

| (es, (c), (c), (c), (c), (c), (c), (c), (c)         | Coat and Hat, Stowell's                                                                                                                                                          |
|-----------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3.20                                                | tlag Coat and Hat                                                                                                                                                                |
|                                                     | Single Cases. 45% 10 Case Lots. 45&10% 22ar Harness. 50&10&5% Wire Coat and Hat:                                                                                                 |
| 1.75                                                | Wire Coat and Hat:                                                                                                                                                               |
| 1.85                                                | Bright Wire Goods-See Wire.                                                                                                                                                      |
| 1.05                                                | Wrought Iron— Box, or Case, Octagon Steel doz. \$2,10@2.20                                                                                                                       |
| 10.00                                               | Cotton doz. \$1.06\(\tilde{a}\). \$1.06\(\tilde{a}\). 15\(\tilde{a}\) Wrought Staples, Hooks, &c.— See Wrought Goods.  Miscellaneous—                                            |
| \$7.50                                              | Bush, Light, doz. \$5.50; Medium,                                                                                                                                                |
| 5%                                                  |                                                                                                                                                                                  |
| Hings 50                                            | Best. \$1.50 1.75 2.00 Common. \$1.40 1.40 1.50 1.75 Potato and Manure 70% Whiftletres. 1b. 4%c Hooks and Eyes:                                                                  |
| the \$0                                             | Brass                                                                                                                                                                            |
| 50 00                                               | Gate and Door Hook. 60&10%<br>Crown Picture 50&10%<br>Bench Hooks—See Bench Stops.<br>Corn Hooks—See Knives, Corn.                                                               |
| 5% 5                                                | Horse Nails—See Nails, Horse Horseshoes—                                                                                                                                         |
| A                                                   | Hose Rubber                                                                                                                                                                      |
| .50<br>.00<br>.00<br>.5%                            | Competitionft. 440 446 3-ply Standardft 5 0 6 0                                                                                                                                  |
| xtra 10%                                            | Garden Hose, %-inch:  Competition                                                                                                                                                |
| .00 ≥                                               | Low Grade                                                                                                                                                                        |
| .50<br>.50<br>25%                                   | From 4 to 10                                                                                                                                                                     |
| Mar.                                                | Chinese Laundry                                                                                                                                                                  |
|                                                     | Nos. 50 55 60 65<br>7%c 69c 82c 79c<br>New England Pressing.lb 31/2@33/4c                                                                                                        |
| Extra                                               | Soldering Coppers, 1 & 116 lb., 21 @.                                                                                                                                            |
| £5%                                                 | Covert Mfg. Co. 23c.; \$ lb., 19 @ 21c 20225                                                                                                                                     |
| 70æ5%<br>@\$ c                                      | Jack Screws-See Screws.                                                                                                                                                          |
| @2½c                                                | Jacks, Wagon— Covert Mfg. Co., Steel                                                                                                                                             |
| @6 c<br>@7 c<br>@8 c                                | Dalsy                                                                                                                                                                            |
| nch.                                                | Kettles-<br>Brass, Spun, Plain                                                                                                                                                   |
| doz.<br>doz.<br>doz.                                | Knife Sharpeners -<br>See Sharpeners, Knife.                                                                                                                                     |
| £10æ5%                                              | Knives-<br>Butcher, Shoe, &c<br>Dick's Butcher Knives                                                                                                                            |
| 65 & 10%<br>35%                                     | Butcher Kilves                                                                                                                                                                   |
| .75 & 1%<br>on                                      | Ft. Madison Cut-Easy, \$ dos\$3.95 Withington Acme, \$ doz., \$2.65; Dent, \$2.75; 'dd. Serrated, \$2.20; Serrated, \$2.10; Yankee No. 1, \$1.50; Yankee No. 2, \$1.15. Drawing— |
| 10&10%<br>74&2%<br>&5&2%<br>70&30%                  | Yankee No. 2, \$1.15. Drawing—                                                                                                                                                   |
| ers use<br>at net                                   | Adjustable Handle                                                                                                                                                                |
| 75&3%<br>Hoe,                                       | Jennings & Griffin                                                                                                                                                               |
| æ10æ2%<br>= #4.50                                   | Cantelo's Folding                                                                                                                                                                |
| z. \$4.00<br>z \$4.80<br>75&20s                     |                                                                                                                                                                                  |
| 75&2%<br>60%<br>75&2%                               | Lightning \$7.50  Lightning \$7.50  Mincing—  Buffalo \$7.50  Smith's, \$7 doz., Single, \$2; Double, \$3  45@50\$                                                               |
| 60%<br>75&2%<br>75&10%<br>75&10%<br>9 doz.<br>85.50 | Farriers'                                                                                                                                                                        |
| ers-                                                |                                                                                                                                                                                  |
|                                                     | Door, Mineral                                                                                                                                                                    |
| 45&10%                                              | Bardsley's Wood Door, Shutter, &c 15% Picture, Sargent's                                                                                                                         |
| Hold-                                               | Handy Ladder Works: Extended Shipped Shipped                                                                                                                                     |
| Han-<br>8314%                                       | Length Length, Ready for K.D.,<br>Feet, Feet, Use, Per doz, Per doz,                                                                                                             |
| 10@60%<br>50&10%                                    | 5                                                                                                                                                                                |
| 19&10%                                              | Base, 2½ inch, Birch, Rubber tip, gro                                                                                                                                            |
|                                                     |                                                                                                                                                                                  |

|                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | November 8, 1900                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1                                                                                                                                                                                                                                                                   | Mowers, Lawn-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Fry-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Acme Nippers 40@40&54                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Ladles- Melting-                                                                                                                                                                                                                                                    | Net prices are generally anoted                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Standard List                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Bernard 8;                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| L. & G. Mfg. Co                                                                                                                                                                                                                                                     | Cheap                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Roasting and Baking-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Parallel Pilers. &c                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Reading                                                                                                                                                                                                                                                             | 10 12 14 16-inch                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Regal, S. S. & Co., % doz., Nos. 5,\$4,50; 10 \$5,00; 20 \$5,50; 30, \$5,00 \$1mplex, % grov. No. 40 \$30.00; 50, \$34,50; 60 \$39.00; 140, \$33.00; 150, \$27,50; 160 \$39.00; 140, \$33.00; 150,                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Elm City Fence Pliers                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Lanterns- Tubular-                                                                                                                                                                                                                                                  | High Grade 4.25 4.50 4.75 5.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Simplex, @ gro., No. 40 \$30.00; 50,                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Regular Tubular aoz. \$4.50 (65.60                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | \$34.50; 80 \$39 00; 140, \$33.00; 150,<br>\$37 50; 160, \$43.00.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Improved Button                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Side Lift Tubulardoz. \$4.75@5.25<br>Square Lift Tubulardoz. \$4.75@8.25                                                                                                                                                                                            | Quaker City                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Paper-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Stub's                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Other Styles 40&10@40&10&5%                                                                                                                                                                                                                                         | Orest American                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Building Paper-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Improved Button                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Bull's Eye Police-                                                                                                                                                                                                                                                  | Style F Low Wheel 800104                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Rosin Sized Sheathing: Per roll 500 sq. ft.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Morrill's Parallel, P dox, \$12.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 234-inch flash light doz. \$3.50@3 75                                                                                                                                                                                                                               | Style E, High Wheel                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Light wt . 20 sq. ft. to lb.\$0 40@0.45                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | P., S. & W. Cast Steel30&10@10g                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 3-inch flash lightdoz. \$4.00@4.25<br>24-inch regulardoz. \$3.25@3.50                                                                                                                                                                                               | Drexel and Gold Coin, low list 50%5%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Medium wt., 12 sq. ft. to lb                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 40%40%5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 3-inch regular doz. \$3.50@\$.75                                                                                                                                                                                                                                    | Nails-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | #0.60@0.65<br>Heavy wt , extra quality.\$0.95@1.05                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Swedish Side, End and Diagonal Cu-<br>ting Pliers.<br>Utica Drop Forge & Tool Co.:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Latches, Thumb-                                                                                                                                                                                                                                                     | Cut and Wise Con Trade Bonant                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Medium Grades Water Proof<br>Sheathing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Utica Drop Forge & Tool Co.:<br>Pliers and Nippers, all kinds                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Roggin's Latchesdoz. \$2@33c                                                                                                                                                                                                                                        | Cut and Wire. See Trade Report.<br>Wire Nail: and Brads, Papered.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Deafening Felt, 9, 6 and 11/2 sq ft.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Plumbs and Levels-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Lawn Mowers-                                                                                                                                                                                                                                                        | List July 20, 189985@85&10%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | to lb., ton                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Plumbs and Levels                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| See Mowers, Lawn.                                                                                                                                                                                                                                                   | Hungarian, Finishing, Upholster-<br>ers, &c. See Tacks                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | York Haven Waterproof Sheathing<br>\$1.35@1.75                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | ~641000 c                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Leaders, Cattle-                                                                                                                                                                                                                                                    | Horse→                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Tarred Paper.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Davis Iron, Machinist Nes. 1 to 14<br>Davis Iron, Adjustable Nes. 6 to 49                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Smalldoz. 45c; large, 55c<br>Covert Mfg, Co                                                                                                                                                                                                                         | A. C25e 23e 22e 21e 21e                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 1 ply (roll 300 sq ft ).ton\$28 00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Disgron's,                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Lemon Squeezers-                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 2 ply, roll 100 sq. ft                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Pocket   Evels                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| See Squeezers, Lemon.                                                                                                                                                                                                                                               | Capewell 19¢ 18¢ 17¢ 16¢ 16¢10&55<br>C. B. K 25¢ 25¢ 22¢ 21¢ 21¢ 405<br>Champlain 28¢ 26¢ 25¢ 24¢ 23¢                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Sand and Emery-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Stanlev's Duplex 25&10@25&10@10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Lifters, Transom-                                                                                                                                                                                                                                                   | Champlain 28¢ 26¢ 25¢ 24¢ 23¢                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | List Dec. 23, 1899 50&10@50&10&5%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Woods' Extension                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Dickson: 2 100 811 00                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Poachers, Egg-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 3 x 4 ft. x (                                                                                                                                                                                                                                                       | Maud S25¢ 23¢ 22¢ 21¢ 21¢505<br>Neponset23¢ 21¢ 20¢ 19¢ 18¢405<br>Putnam23¢ 21¢ 20¢ 19¢ 18¢.3355                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Parers-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Buffalo Steam Egg Poachers, # doz.,<br>No. 1, \$7.20; No. 2, \$11.00 No. 3,<br>\$11.00; No. 4,514.50                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Excelsior                                                                                                                                                                                                                                                           | Standard23c 21e 20e 19e 18c40%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Advance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Payson's:<br><b>Bolid Grip Nos. 643 and 644.</b> © doz.\$1.00                                                                                                                                                                                                       | Standard23¢ 21¢ 20¢ 19¢ 18¢40%<br>Star23¢ 21¢ 20¢ 19¢ 18¢.<br>35& 5%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Baldwin # doz. \$5.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Points, Glaziers'-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Bronzed Iron 70%                                                                                                                                                                                                                                                    | Vulcan23¢ 21¢ 20¢ 19¢ 18¢<br>25&10%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Dandyeach \$7.50                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Bulk and 1 lb. papers., lb. 916010 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Lines-                                                                                                                                                                                                                                                              | Picture                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Family Bay State                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 16. papers                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Wire Clothes, Nos 18 19 20                                                                                                                                                                                                                                          | 11/2 2 21/4 3 31/4 in.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Baldwin. \$\pi \cdot \cdo | Pokes, Animal-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 100 feet\$3.20                                                                                                                                                                                                                                                      | Brass Head45 .60 .70 .95 1.00 gro.<br>Por. Head 1.19 1.10 1.10 gro.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Improved Bay State & doz. \$27.00@30.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Ft. Madison Hawkeye doz. \$3.25<br>Ft. Madison, Western doz. \$3.75                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Ossawan Mills.<br>Crown Solid Braided Chalk3314%                                                                                                                                                                                                                    | Nippers, See Pliers and Nippers.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Reading 72                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Mason's No Oto No 5 33465                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Reading 78                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Police Goods-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Samson Cordage Works;<br>Solid Braided Chalk, No. 0, \$6,00;<br>No. 1, \$6.50; No. 2, \$7.00; No. 3, \$7.50                                                                                                                                                         | Nut Crackers-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | White Mountain                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Manufacturers' Lists25@264:5<br>Tower's255                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Silver Lake Braided Chalk, No. 0, \$6.00;                                                                                                                                                                                                                           | See Crackers, Nut.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Potato-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Polish-Metal-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| W RT                                                                                                                                                                                                                                                                | Nuts-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Saratoga                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Locks, &c Cabinet-                                                                                                                                                                                                                                                  | List Feb. 1, '99.<br>Cold Punched Off                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | \$3.00; No. 2 (1 qt.), \$9.72                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Cabinet Locks331/4@331/4&71/4                                                                                                                                                                                                                                       | Mfrs. or U S. Standard, list.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Picks and Mattocks-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Prestoline Liquid, No. 1 (½ pt.), \$\pi\$ doz. \$3.00; No. 2 (1 qt.), \$9.72                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Door Locks, Latches, &c                                                                                                                                                                                                                                             | Hexagon, plain                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | List Feb. 23, 1899                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | doz. 50; \$\psi\$ et \$4.50; \$\psi\$ boxes, \$\psi\$ doz. 50; \$\psi\$ gr. \$4.50; \$\psi\$ boxes, \$\psi\$ doz. \$2.25; \$\psi\$ boxes, \$\psi\$ doz. \$2.25; \$\psi\$ gr. \$12.00.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| [Net prices are very often made on<br>these goods.]                                                                                                                                                                                                                 | Square, plain                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Pinking Irons-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | U. S. Liquid, 8 oz. cans, W doz. \$1.25;                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Deading Handware Co 404                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | See Irons, Pinking.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Barkeepers' Friend Metal Polish, & dos.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| R. & E. Mfg. Co. 505<br>Sargent & Co. 40640 & 105<br>Slaymaker-Barry Co. 306355<br>Snow's Victor. 50&105                                                                                                                                                            | Hot Pressed:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Pins-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Barkeepers' Friend Metal Polish, # dos.<br>\$1.75; # gr. \$18.00,<br>Wynn's White Silk, % pt.cans, # doz. \$1.50                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Slaymaker-Barry Co                                                                                                                                                                                                                                                  | Mfrs., U. S. or Nar. Gauge Stan'd.<br>Square Blank or Tapped6.30c                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Stove-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Elevator-                                                                                                                                                                                                                                                           | Hexagon Blank or Tapped7.10c                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Escutcheon-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Black Eagle Benzine Paste, 5 h cans                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Stowell's33146                                                                                                                                                                                                                                                      | 0.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Brass                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Black Eagle, Liquid, 1/2 pt. cans                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Wrought Iron, list Dec. 8, '9775&10%                                                                                                                                                                                                                                | Oakum-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Pipe, Cast Iron Soil-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Black Jack Paste, % 2 cans. 8 gro. \$0 00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Dog Collar, S. B. Co40%                                                                                                                                                                                                                                             | Best or Governmentlb. 614c                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | poj ouer mon com                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Ladd's Black Beauty on \$10.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|                                                                                                                                                                                                                                                                     | Navy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Factory Shipmente                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Losoph Divon's 2 or 28 78                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Dog Collar, S. B. Co                                                                                                                                                                                                                                                | Navylb. 5 c<br>U. S. Navylb. 54c                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Factory Shipments.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Joseph Dixon's, # gr. \$5.75                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 8. B. & Co                                                                                                                                                                                                                                                          | U. S. Navylb. 544c                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Standard, 2-6 in                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Joseph Dixon's, # gr. \$5.75. 108 Dixon's Piumbago. # B S Fireside. # gr. \$2.50 Gem. # gr. \$4.50                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Sash. &C                                                                                                                                                                                                                                                            | V. S. Navy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Standard, 2-6 in 70@70@55                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Joseph Dixon's, # gr, \$5.75.   105     Dixon's Piumbago   # 5 %     Fireside   # gr, \$4.50     Japanese   # gr, \$4.50     Japan                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Sash. &C                                                                                                                                                                                                                                                            | U. S. Navy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Standard, 2-6 in                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Jet Black                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 8.8.200                                                                                                                                                                                                                                                             | U. S. Navy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Standard, 2-6 in                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Jet Black                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 8.8.200                                                                                                                                                                                                                                                             | U. S. Navy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Standard, 2-6 in                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Jet Black                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Sash. &C                                                                                                                                                                                                                                                            | U. S. Navy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Standard, 2-6 in                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Jet Black                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 8.8.200                                                                                                                                                                                                                                                             | U. S. Navy. b. 34c Plumbers' Spun Navy. 3c In carload lots 14c lb. off f.o b. New York.  Oll, Axle— Snow Flake: 1 pt. cans. per dos. \$3.00 1 qt. cans. per dos. \$4.80 1 gal. cans. per dos. \$5.00 5 gal. cans. per dos. \$6.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Standard, 2-6 in                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Jet Black                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Sash, &c.— Fitch's Bronze and Brass                                                                                                                                                                                                                                 | U. S. Navy. b. 54c Plumbers' Spun Navy. 3. c In carload lots 14c lb. off f.o b. New York.  Oll, Axle— Snow Flake: \$1.00 1 qt. cans. per dos. \$4.00 1 qt. cans. per dos. \$4.80 2 gal. cans. per dos. \$6.00 2 Oll Tanks—See Tanks, Oil.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Standard, 2-6 in                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Jet Black.  Peerless fron Enamel, 1/2 pt. cans  Wynn's Black Silk, 5 % box, 9 doz. \$1.50  Wynn's Black Silk, 1/2 % box, 9 doz. \$1.00  Wynn's Black Silk, 5/5 n. box, 9 doz. \$1.00  Wynn's Black Silk, 1/2 pt. liq., 9 doz. \$1.00  Poppers, Corn—  Round or Square:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Sash, &c Fitch's Bronze and Brass. 66% Fitch's Bronze and Brass. 66% Fitch's Bronze and Brass. 70% Ives' Pakent. 70% Fayson's Automatic 50% Fayson's Ferfect. 70% Fayson's Signal (new list). 75% Reading. 60%  Wachines— Boring— Without Augers, Upright. Angular. | U. S. Navy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Standard, 2-6 in                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Jet Black \$\psi\$ gr. \$\psi\$.50 per less Iron Enamel, \$\psi\$ pt. cans  Wynn's Black Silk, \$\psi\$ pall \$\psi\$.60.\$\psi\$.1.50  Wynn's Black Silk, \$\psi\$ box, \$\psi\$.00.\$\psi\$.1.50  Wynn's Black Silk, \$\psi\$ box, \$\psi\$.00.\$\psi\$.1.50  Wynn's Black Silk, \$\psi\$ pt. liq. \$\psi\$.00.\$\psi\$.1.50  Poppers, Corn—  Round or Square:  1 qt aro, \$2,00@.\$7.50                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Sash, &c Fitch's Bronze and Brass                                                                                                                                                                                                                                   | U. S. Navy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Standard, 2-6 in                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Jet Black \$\psi\$ gr. \$\psi\$.55)  Feerless Iron Enamel, \$\psi\$ pt. cans  Wynn's Black Slik, 5 \$\psi\$ pall each 714  Wynn's Black Slik, 5 \$\psi\$ box, \$\psi\$ doz, \$\psi\$.00  Wynn's Black Slik, 5 oz. box, \$\psi\$ doz, \$\psi\$.00  Wynn's Black Slik, \$\psi\$ tox, \$\psi\$ doz, \$\psi\$.00  Poppers, Corn—  Round or Square:  1 q1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Sash, &c Fitch's Bronze and Brass                                                                                                                                                                                                                                   | U. S. Navy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Standard, 2-6 in                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Jet Black \$\psi\$ gr. \$\psi\$.50 per less Iron Enamel, \$\psi\$ pt. cans  Wynn's Black Silk, \$\psi\$ pall \$\psi\$.60.\$\psi\$.1.50  Wynn's Black Silk, \$\psi\$ box, \$\psi\$.00.\$\psi\$.1.50  Wynn's Black Silk, \$\psi\$ box, \$\psi\$.00.\$\psi\$.1.50  Wynn's Black Silk, \$\psi\$ pt. liq. \$\psi\$.00.\$\psi\$.1.50  Poppers, Corn—  Round or Square:  1 qt aro, \$2,00@.\$7.50                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Sash, &c Fitch's Bronze and Brass                                                                                                                                                                                                                                   | U. S. Navy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Standard, 2-6 in                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Jet Black \$\psi\$ gr. \$\psi\$.59 Peerless Iron Enamel, \$\psi\$ pt. cans \$\psi\$ pt. ca                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Sash, &c Fitch's Bronze and Brass                                                                                                                                                                                                                                   | U. S. Navy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Standard, 2-6 in                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Jet Black                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Sash, &c.— Fitch's Bronze and Brass                                                                                                                                                                                                                                 | U. S. Navy. b. 34c Plumbers' Spun Navy. 3. c In carload lots \( \frac{1}{2} \) lb. off f.o b. New York.  Oil, Axle— Snow Flake: 1 pt. cans. per doz. \$3.00 1 qt. cans. per doz. \$4.80 1 gal. cans. per doz. \$4.80 5 gal. cans. per doz. \$6.00 5 gal. cans. per doz. \$6.00  Tanks—See Tanks. Oil.  Oilors— Brass and Copper. \( \frac{1}{2} \) loc. \$6.00  Tin or Steel \( \frac{1}{2} \) loc. \$100. \$50  Zinc \( \frac{1}{2} \) loc. \$100. \$10  Malleable, Hammers' Improved, No. 1. 8.60; No. 2, \$4; No. 3, \$4.40 \( \frac{1}{2} \) loc. \$105  Malleable, Hammers' Oil Pattern. Smilettle, Hammers' Oil Pattern. Smalleable, Hammers' Oil Pattern. Smalleable, Hammers' Oil Pattern. Smalleable, Hammers' Oil Pattern. Sol. 105  Wilmot. & Hobbs Mfz. Co. \( \frac{1}{2} \) loc. \$105                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Standard, 2-6 in                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Jet Black                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Sash, &c.— Fitch's Bronze and Brass                                                                                                                                                                                                                                 | U. S. Navy. b. 54c Plumbers' Spun Navy. 3. c In carload lots 14c lb. off f.o b. New York.  Oil, Axie— Snow Flake: i pt. cams. per dos. \$3.00 i qt. cams. per dos. \$15.00 S gal. cams. per dos. \$15.00 S gal. cans. per dos. \$15.00 Tanks—See Tanks, Oil.  Oilors—  Brass and Copper 106.106.50% Tin or Steel 506.106.55% Zinc 506.106.55% Malleable, Hammers' Improved, No. 1. \$3.60. No. \$ \$4.10. No. \$ \$4.40 dos. 20% Malleable, Hammers' Oil Pattern, same list 508.10% Wilmot & Hobbs Mfg. Co: Spring Bottom Cans 706.70&10%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Standard, 2-6 in                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Jet Black \$\ \psi gr. \\$ 1.50 \\ Wynn's Black Silk, 5 \ \phi pall. \\ Wynn's Black Silk, 5 \ \phi pox, \phi doz, \( \phi 1.00 \) Wynn's Black Silk, 5 \( \phi t) \) Poppers, Corn—  Round or Square:  1 \( qt.  \text{gro. } \\  qro. \\  qro. \\  qro. \\  2 \( qt.  \text{gro. } \\  qro. \\                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Sash, &c.— Fitch's Bronze and Brass                                                                                                                                                                                                                                 | U. S. Navy. b. 544c Plumbers' Spun Navy. 3. c In carload lots \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \) \( \ | Standard, 2-6 in                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Jet Black \$\psi\$ gr. \$\psi\$.59 Peerless Iron Enamel, \$\psi\$ pt. cans Wynn's Black Silk, \$\psi\$ b pall \$\psi cans Wynn's Black Silk, \$\psi\$ box, \$\psi cans Wynn's Black Silk, \$\psi\$ box, \$\psi cans Wynn's Black Silk, \$\psi\$ box, \$\psi cans Wynn's Black Silk, \$\psi\$ pt. liq. \$\psi cans Wynn's Black Silk, \$\psi cans \$\psi cans \psi                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Sash, &c.— Fitch's Bronze and Brass                                                                                                                                                                                                                                 | U. S. Navy. b. 54c Plumbers' Spun Navy. 3. c In carload lots 14c lb. off f.o b. New York.  Oil, Axie— Snow Flake: i pt. cams. per dos. \$3.00 i qt. cams. per dos. \$15.00 S gal. cams. per dos. \$15.00 S gal. cans. per dos. \$15.00 Tanks—See Tanks, Oil.  Oilors—  Brass and Copper 106.106.50% Tin or Steel 506.106.55% Zinc 506.106.55% Malleable, Hammers' Improved, No. 1. \$3.60. No. \$ \$4.10. No. \$ \$4.40 dos. 20% Malleable, Hammers' Oil Pattern, same list 508.10% Wilmot & Hobbs Mfg. Co: Spring Bottom Cans 706.70&10%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Standard, 2-6 in                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Jef Black \$\psi\$ gr. \$\frac{\psi}{2}\$. \$\frac{\psi}{2}\$ gr.                                                                                                                                                                                                                                                                                                                                                                                      |
| Sash, &c.— Fitch's Bronze and Brass                                                                                                                                                                                                                                 | U. S. Navy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Standard, 2-6 in                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Jet Black \$\psi\$ \$\frac{\psi}{\psi}\$ \$\frac{\psi}{\psi}\$ \$\psi\$ \$\frac{\psi}{\psi}\$ \$\psi\$ \$\psi |
| Sash, &c.— Fitch's Bronze and Brass                                                                                                                                                                                                                                 | U. S. Navy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Standard, 2-6 in                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Jef Black # gr. 48.59 Peerless Iron Enamel, 4 pt. cans                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Sash, &c.— Fitch's Bronze and Brass                                                                                                                                                                                                                                 | U. S. Navy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Standard, 2-6 in                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Jet Black                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Sash, &c.                                                                                                                                                                                                                                                           | U. S. Navy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Standard, 2-6 in                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Jet Black \$ gr. \$3.50 Peerless Iron Enamel, \$\forall pt. cans\$ 1.50 Wynn's Black Silk, \$\forall box, \$\psi dos. \$1.50 Wynn's Black Silk, \$\forall box, \$\psi dos. \$1.50 Wynn's Black Silk, \$\forall box, \$\psi dos. \$1.50 Wynn's Black Silk, \$\forall box, \$\psi dos. \$1.00 Wynn's Black Silk, \$\forall pt. liq., \$\psi dos. \$1.00 Poppers, Corn Round or Square:  1 qt gro. \$2.00@\$7.50 1 \( \forall qt. \) gro. \$2.00@\$7.50 1 \( \forall qt. \) gro. \$9.50@\$ 10.00 2 qt. gro. 10.50@\$ 11.00 Post Hole and Tree Augers and Diggers— See also Diggers, Post Hole, &c. Potato Parers— See Parers, Potato. Pots— Glue— Enameled 40@10@56 Tinned 40@15 Powder— In Canisters: Duck, i b. each 400 Fine Sworting, I b. each 400 F                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Sash, &c.                                                                                                                                                                                                                                                           | U. S. Navy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Standard, 2-6 in                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Jet Black \$ gr. \$3.50 Peerless Iron Enamel, \$\forall pt. cans\$ 1.50 Wynn's Black Silk, \$\forall box, \$\psi dos. \$1.50 Wynn's Black Silk, \$\forall box, \$\psi dos. \$1.50 Wynn's Black Silk, \$\forall box, \$\psi dos. \$1.50 Wynn's Black Silk, \$\forall box, \$\psi dos. \$1.00 Wynn's Black Silk, \$\forall pt. liq., \$\psi dos. \$1.00 Poppers, Corn Round or Square:  1 qt gro. \$2.00@\$7.50 1 \( \forall qt. \) gro. \$2.00@\$7.50 1 \( \forall qt. \) gro. \$9.50@\$ 10.00 2 qt. gro. 10.50@\$ 11.00 Post Hole and Tree Augers and Diggers— See also Diggers, Post Hole, &c. Potato Parers— See Parers, Potato. Pots— Glue— Enameled 40@10@56 Tinned 40@15 Powder— In Canisters: Duck, i b. each 400 Fine Sworting, I b. each 400 F                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Sash, &c.                                                                                                                                                                                                                                                           | U. S. Navy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Standard, 2-6 in                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Jet Black \$ gr. \$3.50 Peerless Iron Enamel, \$ pt. can                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Sash, &c.— Fitch's Bronze and Brass                                                                                                                                                                                                                                 | U. S. Navy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Standard, 2-6 in                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Jet Black                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Sash, &c.— Fitch's Bronze and Brass                                                                                                                                                                                                                                 | U. S. Navy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Standard, 2-6 in                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Jet Black                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Sash, &c.— Fitch's Bronze and Brass                                                                                                                                                                                                                                 | U. S. Navy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Standard, 2-6 in                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Jet Black                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Sash, &c.— Fitch's Bronze and Brass                                                                                                                                                                                                                                 | U. S. Navy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Standard, 2-6 in                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Jet Black                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Sash, &c.— Fitch's Bronze and Brass                                                                                                                                                                                                                                 | U. S. Navy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Standard, 2-6 in                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Jet Black \$ gr. \$3.50 Peerless Iron Enamel, \$ pt. cans \$1.50 Wynn's Black Silk, \$ \$ pall each 7.04 Wynn's Black Silk, \$ \$ box, \$ doz, \$1.50 Wynn's Black Silk, \$ \$ box, \$ doz, \$1.50 Wynn's Black Silk, \$ \$ box, \$ doz, \$1.50 Wynn's Black Silk, \$ pt. liq., \$ \$ doz, \$1.50 Wynn's Black Silk, \$ pt. liq., \$ \$ doz, \$1.50 Wynn's Black Silk, \$ pt. liq., \$ \$ doz, \$1.50 Wynn's Black Silk, \$ pt. liq., \$ \$ doz, \$1.50 Wynn's Black Silk, \$ pt. liq., \$ \$ doz, \$1.50 Wynn's Black Silk, \$ pt. liq., \$ \$ doz, \$1.50 Wynn's Black Silk, \$ pt. liq., \$ \$ doz, \$1.50 Wynn's Black Silk, \$ pt. liq., \$ \$ doz, \$1.50 Wynn's Black Silk, \$ pt. liq., \$ \$ doz, \$1.50 Poppers, Corn— Round or Square:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Sash, &c.— Fitch's Bronze and Brass                                                                                                                                                                                                                                 | U. S. Navy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Standard, 2-6 in                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Jet Black \$ gr. \$3.50 Peerless Iron Enamel, \$ pt. cans \$1.50 Wynn's Black Silk, \$ \$ pall each 7.04 Wynn's Black Silk, \$ \$ box, \$ doz, \$1.50 Wynn's Black Silk, \$ \$ box, \$ doz, \$1.50 Wynn's Black Silk, \$ \$ box, \$ doz, \$1.50 Wynn's Black Silk, \$ pt. liq., \$ \$ doz, \$1.50 Wynn's Black Silk, \$ pt. liq., \$ \$ doz, \$1.50 Wynn's Black Silk, \$ pt. liq., \$ \$ doz, \$1.50 Wynn's Black Silk, \$ pt. liq., \$ \$ doz, \$1.50 Wynn's Black Silk, \$ pt. liq., \$ \$ doz, \$1.50 Wynn's Black Silk, \$ pt. liq., \$ \$ doz, \$1.50 Wynn's Black Silk, \$ pt. liq., \$ \$ doz, \$1.50 Wynn's Black Silk, \$ pt. liq., \$ \$ doz, \$1.50 Wynn's Black Silk, \$ pt. liq., \$ \$ doz, \$1.50 Poppers, Corn— Round or Square:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Sash, &c.— Fitch's Bronze and Brass                                                                                                                                                                                                                                 | U. S. Navy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Standard, 2-6 in                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Jet Black \$ gr. \$3.50 Peerless Iron Enamel, \$ pt. cans \$1.50 Wynn's Black Silk, \$ b pall each 7:09 Wynn's Black Silk, \$ b pall each 7:09 Wynn's Black Silk, \$ b box, \$ doz, \$1.50 Wynn's Black Silk, \$ b box, \$ doz, \$1.50 Wynn's Black Silk, \$ pt. liq., \$ doz, \$1.50 Wynn's Black Silk, \$ pt. liq., \$ doz, \$1.50 Wynn's Black Silk, \$ pt. liq., \$ doz, \$1.50 Poppers, Corn— Round or Square:  1 qt gro. \$2.00@\$7.50 1 ½ qt gro. \$2.00@\$7.50 1 ½ qt gro. \$2.00@\$7.50 2 qt gro. \$1.50@\$11.00 Post Hole and Tree Augers and Diggers— See also Diggers, Post Hole, &c. Potato Parers— See Parers, Potato. Pots— Clue— Enameled \$0.610@.55 Tinned \$0.610@.55 Tinned \$0.610@.55 Tinned \$0.610@.55 Tinned \$0.610@.55 Duck, \$ ib. each \$0.60 Rife, \$ ib. each \$0.60 Rife, \$ ib. each \$0.60 Rife, \$ ib. kegs \$2.55 Duck, \$ 25.6b kegs \$3.50 Rife, \$ 25.6b kegs \$3.50                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Sash, &c.— Fitch's Bronze and Brass                                                                                                                                                                                                                                 | U. S. Navy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Standard, 2-6 in                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Jet Black                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Sash, &c.— Fitch's Bronze and Brass                                                                                                                                                                                                                                 | U. S. Navy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Standard, 2-6 in                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Jet Black                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Sash, &c.— Fitch's Bronze and Brass                                                                                                                                                                                                                                 | U. S. Navy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Standard, 2-6 in                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Jet Black \$ gr. \$5.50 Peerless Iron Enamel, \$ pt. cans Wynn's Black Silk, \$ 5 pall acch 7:16 Wynn's Black Silk, \$ 5 pall acch 7:16 Wynn's Black Silk, \$ 5 pall acch 7:16 Wynn's Black Silk, \$ 5 pt. Silv \$ doz. \$1.50 Wynn's Black Silk, \$ pt. Silv \$ doz. \$1.50 Wynn's Black Silk, \$ pt. Silv \$ doz. \$1.50 Wynn's Black Silk, \$ pt. Silv \$ doz. \$1.50 Wynn's Black Silk, \$ pt. Silv \$ doz. \$1.50 Wynn's Black Silk, \$ pt. Silv \$ doz. \$1.50 Wynn's Black Silk, \$ pt. Silv \$ doz. \$1.50 Wynn's Black Silk, \$ pt. Silv \$ doz. \$1.50 Wynn's Black Silk, \$ pt. Silv \$ doz. \$1.50 Wynn's Black Silk, \$ pt. Silv \$ doz. \$1.50 Wynn's Black Silk, \$ pt. Silv \$ doz. \$1.50 Wynn's Black Silk, \$ pt. Silv \$ doz. \$1.50 Wynn's Black Silk, \$ pt. Silv \$ doz. \$1.50 Wynn's Black Silk, \$ pt. Silv \$ doz. \$1.50 Wynn's Black Silk, \$ pt. Silv \$ doz.                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Sash, &c.— Fitch's Bronze and Brass                                                                                                                                                                                                                                 | U. S. Navy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Standard, 2-6 in                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Jet Black                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Sash, &c.— Fitch's Bronze and Brass                                                                                                                                                                                                                                 | U. S. Navy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Standard, 2-6 in                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Jet Black                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Sash, &c.— Fitch's Bronze and Brass                                                                                                                                                                                                                                 | U. S. Navy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Standard, 2-6 in                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Jet Black                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Sash, &c.— Fitch's Bronze and Brass                                                                                                                                                                                                                                 | U. S. Navy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Standard, 2-6 in                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Jet Black                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Sash, &c.— Fitch's Bronze and Brass                                                                                                                                                                                                                                 | U. S. Navy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Standard, 2-6 in                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Jet Black                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Sash, &c.— Fitch's Bronze and Brass                                                                                                                                                                                                                                 | U. S. Navy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Standard, 2-6 in                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Jet Black                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Sash, &c.— Fitch's Bronze and Brass                                                                                                                                                                                                                                 | U. S. Navy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Standard, 2-6 in                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Jet Black                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Sash, &c.— Fitch's Bronze and Brass                                                                                                                                                                                                                                 | U. S. Navy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Standard, 2-6 in                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Jet Black                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Sash, &c.— Fitch's Bronze and Brass                                                                                                                                                                                                                                 | U. S. Navy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Standard, 2-6 in                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Jet Black                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Sash, &c.— Fitch's Bronze and Brass                                                                                                                                                                                                                                 | U. S. Navy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Standard, 2-6 in                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Jet Black                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Sash, &c.— Fitch's Bronze and Brass                                                                                                                                                                                                                                 | U. S. Navy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Standard, 2-6 in                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Jet Black                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Sash, &c.— Fitch's Bronze and Brass                                                                                                                                                                                                                                 | U. S. Navy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Standard, 2-6 in                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Wynn's Black Silk, 5 s pail,   each 70 s   wynn's Black Silk, 5 s b. box, 9 doz, 91.75   Wynn's Black Silk, 5 oz. box, 9 doz, 91.75   Wynn's Black Silk, 5 oz. box, 9 doz, 91.75   Wynn's Black Silk, 5 oz. box, 9 doz, 91.75   Wynn's Black Silk, 5 oz. box, 9 doz, 91.75   Wynn's Black Silk, 5 oz. box, 9 doz, 91.50   Poppers, Corn—  Round or Square:   1qt.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Sash, &c.— Fitch's Bronze and Brass                                                                                                                                                                                                                                 | U. S. Navy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Standard, 2-6 in                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Jet Black                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

Nove

Pulle Bay For May For

| .10                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Pulleys-                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Hog Rings and Ringers-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | C. E. Jennings & Co's :                                                                              | Atkin's Criterion40%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Hay Fork, Sucivel or Solid Eye                                                                                                                                                                                                                                                                                                                                                                                                                                             | Hill's Ringsgro. boxes. \$1.50@5 00 Hill's Ringers 6. I. doz. 75c Blair's Rings. \$5 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 | Hack Saw Frames, Nos. 175, 180,<br>330                                                               | Atkin's Adjustable                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Wheel, © doz. \$12.00                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Blair's Ringers P doz. \$0.90@1 00<br>Brown's Rings. P gro. \$6.00@1.25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Griffin's Hack Saw Frames 455                                                                        | Bemis & Cali Co.'s Plate                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Japanned Clothes Line                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Brown's Ringers # doz \$1.00@1.10<br>Perfect Rings # gro. \$9.00@9.50                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Star Hack Saws and Blades                                                                            | Hammer, Bemis & Cell Co.'s new Pat.45%<br>Morrill's No. 1, \$15.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| sawell's Ceiling or End, Anti-Friction 60%                                                                                                                                                                                                                                                                                                                                                                                                                                 | Perfect Ringers, P doz\$1.25@1.35<br>Rapid Rings                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Scroll-<br>Barnes' No. 7, \$15251                                                                    | No. 5, Mill, \$31.00. 40&205<br>No. 10, \$15.50. 40&205                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 80&10%                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Rivets and Burrs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Barnes' No. 7, \$15                                                                                  | Taintor Positive 9 doz \$18 . 404205                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Stowell's Electric Light                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Copper50@50&54                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | without boung attachment, \$18:<br>with bornes tachment, \$20                                        | Sharpeners Knife-<br>Chicago Cheel & Mfg. Co                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 13(in., 16¢; 2 in., 19¢                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Tinners'                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Rogers, comp'e'e. \$4.0015&10\$ Scale Beams—                                                         | Snarpeners, Skate-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 215, 206.<br>Fmpire                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Rivet Sets-See Sets.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | See Beams, Scale.                                                                                    | Shaves Spoke—                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| No. 9, 134 in                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Roasting and Baking Pans-See Pans, Roasting and                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Scales—<br>Family, Turnbull's30@30&10%                                                               | Irondoz. \$1 00@1 25<br>  Wooddoz. \$1.75@2.25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Extra for Plated Finish, F doz. 200                                                                                                                                                                                                                                                                                                                                                                                                                                        | _Baking.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Hatch, Counter:                                                                                      | Bailey's (Stanley R. & L. Co)50&104<br>Goodell's, ₹ doz. \$9.0015&104                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Extra for Anti-Friction Branze Bushing. ½ doz 10¢ brand Rapids All Steel Noiseless 405 bleal No. 13. 13 in 2 doz 20¢ bustras 134 in 16¢; 2 in 1856¢ Visarra 134 in 16¢; 2 in 165¢ Visarra 134 in 16¢; 2 in 165¢ Visarra 134 in 16¢; 2 in 165¢ Visarra 134 in 16¢; 2 in 19¢ Iackle Blocks—See Blocks.                                                                                                                                                                       | Acme. Stowell's Anti-Friction50%<br>Barn Door, Sargent's list50&10&5%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Piatform, 4 ib. by 1/4 ozdoz. \$5.75<br>Two Platforms, 8 lb. by 1/2 oz<br>doz. \$14.00               | Shears—<br>Cast Iron 7 8 9 in.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| improved1% in., 15%c: 2 in., 18%c                                                                                                                                                                                                                                                                                                                                                                                                                                          | Rarn Door, Sargent's list50&10&55 Cronk's Stay                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Union Platform, Plain\$1.75 \alpha.2.00<br>Union Platform Striped \$1 85\alpha 2 15                  | Cast Iron 7 8 9 in. Best\$18.00 18.00 \$20.00 gro. Good\$13.00 15.00 17.00 gro.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| No. 26, Troy184 in., 14\60; 2 in., 16\60;<br>Star184 in., 16\60; 2 in., 19\60                                                                                                                                                                                                                                                                                                                                                                                              | Lane's Sav 3347<br>Stowell's Barn Door Stay # doz. \$1.25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Chatillon's Eureka                                                                                   | Straight Trimmers, &c.:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Rope-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Can's the Car Postal Las haunte                                                                      | Best qualt'y, Jan. 60& 10& 10@ 70& 5%<br>Nickel 60@ 60& 5%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Pitcher Spout                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Manila, 7-16 in and larger.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | "The Standard" Portables 45% "The Standard" R. R. and Wagon 50%                                      | Nickel                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Pump Leathers, all sizesgro. \$6.00<br>Remes Dbl Acting (low list) 55%<br>Fint & Walling's Fast Mail55%55&10%                                                                                                                                                                                                                                                                                                                                                              | Manila34-inch lb. 94@ 94c<br>Manila4 and 5-16 in lb. 10 @ 1014c                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Scrapers-<br>Box. 1 Handledoz \$2 250.2.75                                                           | Tailors' Shears                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Fint & Walling's Fast Mail55 455 104<br>Fint & Walling's Pitcher Spout73 55<br>Laud's Suction Pumps, U. Co204                                                                                                                                                                                                                                                                                                                                                              | Manila, Tarred Rope, 15<br>thread                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Box. 2 Handle doz. \$3,75@4.00<br>Ship. No 1. doz. \$3 50; No 2.                                     | Seymour's, Jey                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Myer's Pumps, low list                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Sigal 7-16 in and larger lb. 6 Ch. 64c                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Adjustable Box Scraper (S. R. & L. Co.)                                                              | Wilkinson's Medge                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| chokable, B. & L. Block Co20%                                                                                                                                                                                                                                                                                                                                                                                                                                              | Sisal                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | \$9.00                                                                                               | Wilkinson's Sheep                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Punches—<br>Revolving (4 tubes)doz. \$3 75@4.25<br>Naddlers' or Drive. gooddoz 65@70c                                                                                                                                                                                                                                                                                                                                                                                      | plylb. 6@ 64c<br>Sisal, Tarred, Medium                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Screens, Window and                                                                                  | Forged Handles, Steel Blades20&105<br>Malleable Handles. Laid with Steel.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Spring, good quality\$1.65@17a                                                                                                                                                                                                                                                                                                                                                                                                                                             | Lath Yarnlb.51/4@ 51/4c                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Frames—<br>Bonanza Window Screens50&10&2 44                                                          | Forged Handles, Steel Blades, Berlin 40&103                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Remis & Call Co.'s Check                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Best, ¼-in, and largerlb @13 c<br>Med'm, ¼-in, and larger                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Fiver Pattern Vindow :creen.50&10&2%<br>MaineWindow Screen Frames 40&10&5%                           | Jennings & Griffin Mfg. Co's, 7 to 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Singara Solid Punches 55%<br>Strel Screw, B & K. Mfg. Co 40%<br>Tinners' Hollow, P., S. & W. Co 356033&5%                                                                                                                                                                                                                                                                                                                                                                  | lb @11%c<br>Com., 4-in. and larger.lb @ 8%c                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Phillips' Window Screen Frames60%<br>Porter's Extension Window Screens<br>50&108                     | Niagara Ships                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Tinners' Hollow, P., S. & W. Co                                                                                                                                                                                                                                                                                                                                                                                                                                            | Jute Rope, No. 1, ¼ in. and uplb, @ 6 c Jute Rope No. 2, ¼ in.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Wabash Soring Adj. Screen50%                                                                         | Cronk's Pruning the rs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Tinners' Solld, P., S. & W.Co., P doz.,                                                                                                                                                                                                                                                                                                                                                                                                                                    | and up                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | See Drivers, Screw                                                                                   | and Saw, \$\frac{1}{2} doz. \$18.0025\@25&10\frac{1}{2}\$ Disston's Pruning Hook, \$\pi\$ doz. \$12.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Rail-Barn Door, &c                                                                                                                                                                                                                                                                                                                                                                                                                                                         | and up lb @ 44c                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Bench and Hand-<br>Bench, Irondoz, 1 in., \$3,00@3,25;                                               | John T. Henry Mfg. Company<br>Pruning Shears all grades50&5%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Rarn Door, Light. In 12 % 34<br>100 feet                                                                                                                                                                                                                                                                                                                                                                                                                                   | Wire Rope-<br>Galvanized                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 11/4, \$3.50@3.75: 11/4, \$4.00@4.50<br>Bench, Wood, Beech, .doz. \$3.50@2.75                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| B. D., for N. E. Hangers:<br>Small. Med. Large.                                                                                                                                                                                                                                                                                                                                                                                                                            | Ropes, Hammock                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Hand, Wood                                                                                           | Nagley's Pruning Shears P doz. \$8.00<br>P S & W Co. 331623316 104                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Siding Door, Bronzed Wr't Iron,<br>ft. 64c                                                                                                                                                                                                                                                                                                                                                                                                                                 | Covert Mfg. Co                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Coach, Lag and Hand Rail—                                                                            | Seymour's                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Sliding Door, Iron Painted 21/2@3c<br>sliding Door, Wrought Brass. 11/4                                                                                                                                                                                                                                                                                                                                                                                                    | Rules-<br>Boxwood75&10&10&10@75&10&10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Lag. Common Point, list Oct. 1. '99                                                                  | Stowell's Anti-Friction 50s                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| in                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | #10#10#<br>Ivory40#10#10#10#10#10#10#10#10#                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Coach and Lag, Gimlet Point, list Oct. 1. '9980&5@80.\$104 Hand Rail, list Jan. 1, '81.60&10@\$      | Patent Roller                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| foot. Side                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Lufkin's Steel                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Jack Screws-                                                                                         | The state of the s |
| Lanes' Standard, \$100 ft                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Poxwood75&10&10@75&10&10&10%<br>Ivory                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Millers Fails                                                                                        | Sliding Shutter-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Mckinney's None Better                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Sad Irons-See Irons, Sad.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Sargent                                                                                              | Sarkent a more contraction of the                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Cronk's Double Braces Steel Rail, \$\footnote{\phi} \) (ronk's O. N. T. Bail. \$\footnote{\phi} \) (ronk's O. N. T. \$\partial{\phi}\$ 100 ft., \$1 \text{ inch. } \footnote{\phi} \) (2.90 Lanes' Standard. \$\psi\$ 100 ft. \$3.75 \] (swrence Bros. \$\psi\$ ft. \$4\phi \) (we kinney's None Better. \$\phi\$ ft. \$\phi\$ (Mexinney's Standard. \$\psi\$ ft. \$3\phi \) (Mosre's Wrt. Bracket, Steel. \$\phi_{\phi} \) (5x Stowell's Steel Rail, Plain. \$\pri\$ (5x) | Sand and Emery Paper                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                      | Shells Empty                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Pakes                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | See Paper and Cloth.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Flat or Round Head, Brass 50@50&10%                                                                  | Brass She Is, Empty :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Malleable                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Sash Cords—See Cord, Sash.<br>Sash Locks—See Locks, Sash.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Set and Cap—<br>Set (Iron or Steel)                                                                  | Paper Shells, E noty:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| fort Madison Red Head Lawn 83 25<br>Fort Madison Blue Head Lawn 83 00                                                                                                                                                                                                                                                                                                                                                                                                      | Sash Weights-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Sq. Hd. Cap                                                                                          | Acme, Ideal, Leader, New Rapid,<br>8 sokel as 10, 12, 16 and 20 gauge,<br>33152-105                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| ackson Lawn, 29 and 30 teeth                                                                                                                                                                                                                                                                                                                                                                                                                                               | Sausago Granois of Fills                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | List Jan. 1, 1900.                                                                                   | tub Vellow R val 10 14 16 and                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Kohler's Lawn Queen, 24-tooth, \$\pi\$ doz. \$4.50                                                                                                                                                                                                                                                                                                                                                                                                                         | ers—See Stuffers or Fillers, Sausage.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Flat Head, Iron                                                                                      | 20 gauge15%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Kohler's Paragon, 24-tooth, & doz. \$3.00 Kohler's Steel Garden, 14-tooth, & doz.                                                                                                                                                                                                                                                                                                                                                                                          | Saw Frames—<br>See Frames, Saw.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Round Head, Iron                                                                                     | Climax Club, League, Rival, 10 and<br>12 gauge                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Konler's Malleable Garden, 14-tooth,                                                                                                                                                                                                                                                                                                                                                                                                                                       | Caw Sare-See Sets Sain                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Trouble Treate Droite                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Rasps, Horse-                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Saw Tools-See Tools. Saw.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Scroll Saws—See Saws, Scroll.                                                                        | gauge. Metal Lined, 10, 12 16 and 20 gauge                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 10 sston's                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Atkins' Circular                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                      | Shells, Loaded -<br>Loaded with Black Powder                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| New Micholson Horse Rasp 70%10%                                                                                                                                                                                                                                                                                                                                                                                                                                            | Atkins' Mulay, Mill and Drag 50&10%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Natural Finish. per doz. \$7.50@7 75<br>Pol. Bladeper doz. \$8.00@8,15                               | Loaded with Nitro Powder 40&5%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| See also Files.  Razors —  Fox Razors, No. 42, # doz. \$20.00  Fox Razors, No. 82, # doz. \$24.00  Fox Razors, No. 82, Platina, # doz  Serling Razor Works \$24.00                                                                                                                                                                                                                                                                                                         | Atkins Cross Cuts 35.55 Atkins' Mulay, Mill and Drag. 50&107 Atkins' One-Man Saw 405 Atkins' Wood Saws 405 Atkins' Wood Saws 405 Atkins' Hand, Compass, &c. 407 Disaton's Circular Solid and Inserted                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Painted or Bronzedper doz. \$8.00<br>We-d and Bushper doz. \$7,25@7,50                               | 40&10&10&5%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Fox Razors, No. 82, Platina, P doz \$24.00                                                                                                                                                                                                                                                                                                                                                                                                                                 | Disston's Circular Solid and Inserted Tooth                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Scythe Snaths—<br>See Snaths, Scythe.                                                                | Factory Shipments:<br>Horse and Mule, per keg\$\$ 00 7(3.5)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Razor Strops                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Diseason Crosscotts                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Seeders-                                                                                             | Burden's, all sizes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| see Strops, Razor.                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Disston Narrow Crosscuts50@50&10g<br>Disston Mulay, Mill and Drag50g<br>Disston Framed Woodsaws35@35&7%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Raisin—<br>Enterprise95@305                                                                          | Schoenberger                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Recis Fishing Heatry & Aluminum, German Silver, Gold, Bronze, Silver, Rubber, Populo                                                                                                                                                                                                                                                                                                                                                                                       | Disaton Wo Misaw Blades 40@40&7%5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Sets-<br>Awl and Tool-                                                                               | evenness in current prices, whether from manufacturers or jobbers.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| siold, Bronze, Silver, Rubber, Populo<br>and Sainon, Single Action, Multiply-<br>in, and Ouadruple, all sizes. 25%<br>Hendryx Single Action Series, 102P<br>and PN, 202P and PN, 102PR and<br>PN, 202PR and PN, 304P and<br>PN, 20304P and PN, 502 and 502N,<br>802 and 802N, 02084N, Competitor, 50%<br>Hendryx Multiplying and Quadruple<br>Series, 3004N and PN, 4N and PN,<br>2004N, 2004Pand PN, 002904PN, 0924                                                       | Disston Frames woodssws50g57ac/9; Disston Woodssw Rods 256 Disston Woodssw Rods 256 Disston Hand saws. Nos 12, 99, 9 18, 4100, Ds, 120, 78, 77, 6 25/245&76 Disston Hand Saws, Nos 7, 07, 107; 3, 1, 0, 00, Conbination 30,3302/39 Disston Battoner Saws and 8, 10, 12, 12, 12, 12, 12, 12, 12, 12, 12, 12                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Brad Awl and Tool Sets:<br>Wood Hdle., 10 Awls doz. \$2,00 @ 2 25                                    | Shot—<br>Drop, up to B, 25-lb, bag\$1,30@140.<br>Drop, up to B, 5-lb, bag                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| and PN, 202P and PN, 102 PR and                                                                                                                                                                                                                                                                                                                                                                                                                                            | Diaston Hand Saws, Nos 7, 107, 107, 107, 3, 3, 1, 0, 00, Combination 30@30&73@7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Wood Hdle., 14 Awls, 6 Tools<br>doz. \$2.50@2.60                                                     | Ruck 95 lh han 91 55@ 1 65                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| PN, 00304P and PN, 502 and 502N, 502 and 802N, 02084N, Competitor, 503                                                                                                                                                                                                                                                                                                                                                                                                     | Disston Butcher Saws and Bis es                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                      | Chilled, 25 lb. bag                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| sories, 3004N and PN, 4N and PN,                                                                                                                                                                                                                                                                                                                                                                                                                                           | C. E. Jennings & Co.'s.: Back Saws                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | \$18; 3, \$12; 4, \$9; 5, \$7                                                                        | Dust Shot. 5-lb bag                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 290 1N, 2004 P and PN, 002904 PN, 0924<br>and 0924 N, 5009 N and PN                                                                                                                                                                                                                                                                                                                                                                                                        | Commend For Hole Same                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | \$12; No. 4, \$12; No. 5, \$18 15&103<br>Stanley a Excelsion:<br>No. 1, \$7.50; No. 2 \$4.00; No. 3, | No. 2, Polished, Sq. or Rd. Point, D<br>or L Handle:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| RASISTARS-                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Hand Sawa20@305                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | \$5.50                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Peace Circular and Mill                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Ft. Madison Rakes, Shovel and Hoe                                                                    | Plain Back \$10.50 \$9.60<br>Strap Back 9.50 9.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Electro Plated                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Peace Hand, Panel and Rip                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Nall-<br>Round, assortedgro. \$2.25@5.73                                                             | Cleveland Pat'n 10.30 9.30<br>C5, DL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Riddles, Crain or Sand-                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Stroonds' Circular Saws 505                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Octagongro. \$4.25@4.75                                                                              | 3d Grade. 4th Grade                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 13 in. per doz\$2.25@\$2.50<br>15 in. per doz\$2.50@\$2.75                                                                                                                                                                                                                                                                                                                                                                                                                 | Saws                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Buck Brothers                                                                                        | Strap Back 8.10 7.50                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Rings and Ringers-                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 8aW840@40@01                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Rivet-                                                                                               | AT-A- The - bear of the state o |
| Bull Rings—<br>2 21/4 Inch.<br>30 75 0.83 0.88 doz.                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Regular list                                                                                         | clation prices to small retailers but are                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Aiken's Genuine % doz. \$5.50 a4.00<br>Aiken's Imitation # doz. \$3.00 a3.10                         | often staded by jobbers \$0.50 al. 00, and Common, Plain Back Shovels are generally sold by jobbers at \$6.75@7.90.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

| 90                                                                                                                                                    | THE IRO                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | L        |
|-------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| Shovels and Tongs-                                                                                                                                    | Tinned Irondoz. 80.75@1.25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Ci       |
| TOTAL ALCOHOL                                                                                                                                         | Jennings' Star                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Ec<br>Ke |
| Sieves and Sifters-                                                                                                                                   | Klag₩ doz. \$2.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Li       |
| Hunter's Imitation.gro. \$11.00@12.00<br>Buffalo Metallic Blued. S. S. & Co., Fgr.:                                                                   | Staples-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | L        |
|                                                                                                                                                       | Barbed Blind                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | T        |
| Eclipse gr. \$10.00<br>Blectric Light. @ gr. \$12.00                                                                                                  | Fence Staples, same price as Barbed Wire. See Trade Report.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 4.1      |
| Eclipse. \$gr.\$10.00 Blectric Light. \$gr.\$12.00 Hunter's Genuine \$gr.\$12.50 Shaker (Barler's Pat.) Flour Sifters. \$\partial \text{doz}, \\$2.00 | Fence Staples, same price as Barbed<br>Wire. See Trade Report.<br>Poultry Netting, Staples per lb. 5c.<br>Grand Crossing Fack Co.'s list80&10%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Si       |
| Sieves, Tin Rim-                                                                                                                                      | Steels, Butchers'-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 131      |
| Inch                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Cl       |
| Inch                                                                                                                                                  | Dick's                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |          |
| Black, scant \$0.78 .80 .83                                                                                                                           | Nichols Bros                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |          |
| Nested, 10, 11 and 12 Inch.                                                                                                                           | Stocks and Dies-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |          |
| Mesh 18, Nested, doz\$9,75@0 8)<br>Mesh 20, Nested, doz85@ .90<br>Mesh 24, Nested, doz 1.00@1.05                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |          |
| Mesh 24, Nested, doz 1.00@1.05<br>Sinks-                                                                                                              | Blacksmiths'                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | SI       |
| Cast Iron-                                                                                                                                            | Green River. 255 Lightning Screw Piate. 255 Lightning Screw Piate. 255 Re-ce's New Screw Piates. 253305 Curtis Reversible Ratchet Die Stock. 255                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |          |
| Standard list                                                                                                                                         | Resce's New Screw Plates25@305<br>Curtis Reversible Ratchet Die Stock, 255                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |          |
| Wrought Steel                                                                                                                                         | Stone-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |          |
| Columbus Galv'd and Enameled. 60&5%<br>Columbus, Painted45%                                                                                           | Scythe Stones-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |          |
| In the Co. Man Con. Additional transfer of the Con.                                                                                                   | Chicago Wheel & Mfg. Co:<br>Gem Corundum, 10 inch. \$10.90 per                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |          |
| Skeins, Wagon-<br>Cast Iron                                                                                                                           | Gem Corundum, 10 inch, \$10.90 per gro., 12 inch, \$12.00 Cleveland Stone Co., list Nov., '9233147 Pike Mfg. Co., 4ist '95-'963345                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |          |
| Malleable Iron                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |          |
|                                                                                                                                                       | Oll Stones, &c.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | L        |
| "D" Slates 50&10@50&10&10%                                                                                                                            | Chicago Wheel & Mfg. Co.:<br>Corundum Oil, Double Grit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | A        |
| "D" Slates50&10@50&10&10%<br>Unexcelled Noiseless Slates<br>60&5 tens@60&6 tens&5%                                                                    | Pike Mfg. Co.:<br>Hindostan No. 1, P b861                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | SS       |
| Wire Bound                                                                                                                                            | Corundum Axe Stones, Slips, etc555 Pike Mfx, Co.; Hindostan No. 1, \$\Pi\$ \$\Delta \text{of} \text{s} \text{Sand Stone}56 Turkey Oil Stone, Extra, 5 to \$\text{s} \text{10} t \text{Superior} \text{Superior} \text{33\fair} \text{30} \text{210} t \text{Turkey Slips}\$1.50 Lilly White Washita 60\epsilon \text{Rosy Ked Washita} 60\epsilon \text{Washita Stone, Extra} 50\epsilon \text{Washita Stone, Extra} 50\epsilon \text{\$\epsilon} \text{\$\text{Superior} \text{\$\text{\$\text{\$\text{\$\text{\$\text{Superior} \$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\ |          |
| Slaw Cutters—See Cutters.                                                                                                                             | Turkey Slips\$1.50                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | L        |
| Slicers, Vegetable—                                                                                                                                   | Rosy Red Washita                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |          |
| Snaps, Harness-<br>German                                                                                                                             | Washita Stone, No. 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |          |
| Covert Mfg. Co.: 35.825                                                                                                                               | Rosy Red Washita   80¢                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |          |
| High Grade                                                                                                                                            | Washita Silps, No. 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 1000     |
| Covert Mfg. Co.:   Deroy                                                                                                                              | Arkansas Stone, No.1,5 gto8in.\$3.50  <br>India Oil Stones                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 100      |
| Banner                                                                                                                                                | Tanite Mills:<br>Emery Oil, % doz. \$5.0050@80%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |          |
| W. & E. T. Fitch Co.:                                                                                                                                 | Stoners-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 1        |
| W. & E. I. FRON CO.:  Bristol                                                                                                                         | Cherry-<br>Enterprise25@30%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 1        |
| National50&55                                                                                                                                         | Stops, Bench-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | I        |
| Perfect                                                                                                                                               | Millers Falls                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 1        |
| Victor60&54                                                                                                                                           | \$11.00, 40#20%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | ı        |
| Sold Steel                                                                                                                                            | Stops, Window-<br>Ives' Patent25&56                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |          |
| Bargent's Patent Guarded                                                                                                                              | Wilcox, Steel, per doz., \$6,0050%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | ١        |
| Snaths— Scythe                                                                                                                                        | Stove Boards-<br>See Boards, Stove.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | :        |
| Snips, Tinners'-See Shears                                                                                                                            | Stove Polish-See Polish, Stove.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | ı        |
| Soldering Irons—<br>See Irons, Soldering.                                                                                                             | Strainers, Pump—<br>Diamond Joe Pump Strainersper doz. 75¢                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 1        |
| Spoke Trimmers-                                                                                                                                       | Straps, Box-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 1        |
| See Trimmers, Spoke.                                                                                                                                  | Stretchers, Carpet—                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | ١        |
| Spoons and Forks-                                                                                                                                     | Cast Iron, Steel Pointsdoz. 55@65c<br>Cast Steel, Polisheddoz. \$2.25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |          |
| Silver Plated-<br>Flat Ware                                                                                                                           | DOUNCE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | ľ        |
| Wm. Rogers M'g. Co50&10%<br>Miscellaneous—                                                                                                            | Stuffers, Sausage-<br>Miles' Challenge, # doz. \$2050@50&54                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 1        |
| German Silver                                                                                                                                         | Miles' Challenge, F doz. \$2050@50&55<br>Enterprise Mfg. Co25@25&7}<br>National Specialty Mfg. Co., iist Jan.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 1        |
| Wm. Rogers Mfg. Co.:<br>18% German Silver                                                                                                             | 1, 77                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ı        |
| Springs                                                                                                                                               | Tacks Brads, &c                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | ١        |
| Door-                                                                                                                                                 | List Jan. 15, '99.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |          |
| Gem (Coil)                                                                                                                                            | Carpet Tacks, American 904:10@\$ American Cut Tacks 904:30@\$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 1        |
| Warner's No. 2, \$\psi\$ doz. \$2.50; No. 3, \$3.00                                                                                                   | Swedes Iron Tacks 90040@ Swedes Upholsterers' Tacks                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |          |
| Carriage, Wagon, &c.                                                                                                                                  | 90&10@\$<br>Gimp Tacks                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |          |
| Factory Shipments.                                                                                                                                    | Trimmers Tacks90&30@%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |          |
| 114 in and widerBlk. Hf.Brt. Brt. http://disch.bl. bl. bl. bl. bl. bl. bl. bl. bl. bl.                                                                | Trimmers' Tacks90&30@\$ Looking Glass Tacks70&10@\$ Bill Posters' and Railroad Tack                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |          |
| Cliff's Bolster Springs \$ pair 55¢                                                                                                                   | 90&40@\$ Hungarian Nails                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | П        |
| Sprinklers, Lawn-                                                                                                                                     | Trunk and Clout Nails 80@10 @ \$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | П        |
| Enterprise                                                                                                                                            | NOTE.—The above prices are for<br>Straight Weights.* An extra 55 is given<br>Star Weights.* and an extra 10£15 on<br>Standard Weights.***                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |          |
| Squares-                                                                                                                                              | Standard Weights.***                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 1        |
| Michael mlasted   Tiest Iam 5 1000                                                                                                                    | Miscellaneous-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | - 1      |
| Steel and Iron. 1                                                                                                                                     | Double Point Tucks90d 7 tens<br>Steel Wire Brads, R. & E. Mfg.<br>Co.'s list50d 10@60s                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |          |
| Bevels                                                                                                                                                | See also Nails, Wirs,                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 1        |
| Disston's Try Sq. and T-Bevels602103<br>Winterbottom's Try and Miter502103                                                                            | Tanks, Oll-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |          |
|                                                                                                                                                       | Emerald, S. S. & Co30-gal. \$3.20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 5 F      |
| Squeezers-                                                                                                                                            | Emerald, S. S. & Co                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |          |
| Lemon-<br>Wood, Common, gro., No. c, \$5.25                                                                                                           | Tanks, Oll—  Emerald, S. & Co                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 9        |

| 0.75@1.25<br>2.90@3.85                                 | Chesterman's       25@25@54         Eddy's Steel       40@40@54         Eddy's Metallic       8346@3346.55                                                                                        | India 3-Ply Hemp, 1%-lb. Balls5e<br>2, 3, 4 and 5-Ply Jule, %-lb. Bulls                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|--------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| .85@1.90<br>loz. \$2.00                                | I welled to Consult                                                                                                                                                                               | Mason Line, Linen, ½-lb, Balls 150<br>No. 264 Mattress, ¼ and ½-lb, Balls 150<br>Wool                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|                                                        |                                                                                                                                                                                                   | 77 004                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 814@814c                                               | Thermometers— Tin Case80@90&10%                                                                                                                                                                   | Vises-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                                                        |                                                                                                                                                                                                   | Solid Box                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| per lb. 5c.                                            | Standard Wire SOA10A55                                                                                                                                                                            | Parallel-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|                                                        | Ties, Wall-                                                                                                                                                                                       | Athol Machine Co.: Simpson's Adjustable44 Standard44                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 80%                                                    | Cleveland Wire Spring Co.; Galv. 8t-el 5 32 x 614 1n, \$1000.\$10.00 Galv. 8teel 5 32 x 814 1n, \$1000.\$11.00 Galv. Steel 5 32 x 114 in \$1000.\$11.00 Galv. Steel 5 32 x 1514 in \$1000.\$12.00 | Amateur                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 50%                                                    | Galv. Steel 5-32 x 816 in. # 1000.\$11.00  <br>Galv. Steel 5-32 x 1116 in. # 1000.\$12.00  <br>Galv. Steel 5-32 x 1516 in. # 1000.\$14.06                                                         | Fisher & Norris Double Screw 15&104<br>Hollands':                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 5@25&10%                                               | Tinners' Shears, &c                                                                                                                                                                               | Machinists'                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| @ 10d 10%                                              | See Shears, Tinners', &c.                                                                                                                                                                         | Rev-tone. Lewis Tool Co. 20214 Massey's Perfect. 1524 Massey's Clincher 1624                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 50%<br>es40%                                           | Ilnware-                                                                                                                                                                                          | Merrill's Miller's Fallslow list let Parker's:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 254                                                    | Stamped, Japanned and Pieced, sold very generally at net prices.                                                                                                                                  | Victor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 254<br>254304<br>Stock.254                             | Tire Benders, Upsetters,                                                                                                                                                                          | Victor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                                                        | &c.—See Benders and Upset-                                                                                                                                                                        | Sargent's<br>Simpson's Adjustable                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| -                                                      | ters. Tire                                                                                                                                                                                        | Snediker's X. L                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 0.90 per                                               | See Cutters Tobacco.                                                                                                                                                                              | Van, W. & V. Hdw. Co                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 19233144                                               | _                                                                                                                                                                                                 | Saw Filers-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                                                        | Coopers'-                                                                                                                                                                                         | Dissero's D 3 Clamp and Guide, & dog                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 50%                                                    | Saw-                                                                                                                                                                                              | Bonney's, No. 1, \$13; No. 3, \$16 50 \(\alpha\) 1/34<br>Disstrat's D 3 Clamp and Gulds. \(\beta\) dox<br>\$30 \qquad 24<br>Reading. 40\(\alpha\) 1/3<br>Wentworth's Rubber Jaw, Nos. 1, 2<br>and 3 \qquad 30\(\alpha\) 1/3<br>30\(\alpha\) 30\(\alpha\)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| etc55%                                                 | Atkins' new list                                                                                                                                                                                  | Miscellaneous-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 33143<br>3314&101                                      |                                                                                                                                                                                                   | Bignall & Keeler Combination Pine                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                                        | Ship— L. & I. J. White                                                                                                                                                                            | Vise                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 60¢                                                    | Transom Lifters-                                                                                                                                                                                  | 87 Series                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 50¢<br>40¢                                             | See Lifters, Transom.                                                                                                                                                                             | No. 870                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 904 8                                                  | Traps- Game-                                                                                                                                                                                      | Wads-Price Per M.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 80¢<br>70¢<br>n.\$2.89                                 | Oneida Pattern                                                                                                                                                                                    | B. E. 11 up                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| n.\$3.50                                               | Nawley & Norton                                                                                                                                                                                   | B. E., 8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 50@80%                                                 | Mouse and Rat-                                                                                                                                                                                    | P. E., 11 up\$1.00 8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                                                        | Mouse, Wood, Choker, doz. holes 9@94c                                                                                                                                                             | D E 7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 25@30%                                                 | Mouse, Round or Square Wire doz. \$0.85@1.00                                                                                                                                                      | Ely's B E., 11 and larger. \$1.001.15<br>Ely's P. E., 12 to 20\$3 0002.15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|                                                        | Diamond Joe Mouse Trapsper doz. \$0.6<br>Diamond Joe Rat Trapsper doz. \$1.00<br>Marty French Rat and Mouse Traps                                                                                 | Wagon Jacks-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 15&10%<br>00; No. 2,<br>00, 40&20%                     | (Genuine): No. 1, Rat, Each \$1.12\frac{1}{2}:\ \% \ doz. \\$12.00 No. 3, Rat, \% \ doz. \\$6.00; case of 50 \\$5.25 \ doz.                                                                       | See Jacks, Wagon.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 00, 40220%                                             | NO. 356. KAL W (10%, #1 75; case of 7%                                                                                                                                                            | Ware, Hollow-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 35&5%<br>)50%                                          | No. 4, Mouse, # doz. \$3.50; case of 72                                                                                                                                                           | 8. S. & Co. Reduced List401                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| )50%                                                   | No. 5, Mouse, # doz. \$2.75; case of 72                                                                                                                                                           | Cast Iron, Hollow-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|                                                        | Schuyler's Rat Killer, No. 1, \$2 gr. \$30.00;<br>No. 2, \$2 gr. \$30.00; Mouse, No. 3,                                                                                                           | Stove Hollow Ware:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| lish, Stove.                                           | \$18.0050%                                                                                                                                                                                        | Ground                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| .per doz. 75¢                                          | Balloon, Globe or Acme<br>doz. \$1.15@1.25; gro. \$12.00@14.00                                                                                                                                    | Maslin Kettles80@80414<br>Boilers and Saucepans60@6063                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 20&10%                                                 | Harper, Champion or Paragon                                                                                                                                                                       | Tinned Boilers and Saucepans 5005268                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| t-                                                     | Trimmers, Spoke-                                                                                                                                                                                  | See also Pots, Glue.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| loz. 55@65c<br>.doz. \$2.25                            |                                                                                                                                                                                                   | Enameled-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| doz. \$1.75                                            | Disston Brick and Pointing                                                                                                                                                                        | Agate Nickel Steel Ware, list July'99,8% Granite Ware, list Jan. 1, '94, revised Jan. 2, '95                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 50@50&5%<br>85@25&7\ <b>%</b>                          | Disston "Standard Brand" and Ga                                                                                                                                                                   | second Quanty, Grapite                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| , list Jan80%                                          | Never-Break Steel Garden Trowels405                                                                                                                                                               | Iron Cla1:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|                                                        | gro. \$7.00 Peace's Plastering                                                                                                                                                                    | Iron Clal: Peopered Ware, high list                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                                                        | Toucke Warehouse to                                                                                                                                                                               | Tea Kettles-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 90&10@\$<br>90&30@\$                                   | B. & L. Block Co.'s list40s                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 90&40@%<br>8                                           | Daisy Stove Trucks, Improved pattern # doz. \$21.00                                                                                                                                               | Each45e 80e 85e 68e                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 90&40@\$                                               | Tubs. Wash-                                                                                                                                                                                       | Steel Hollow Ware.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| .90&40@≴<br>.90&30@≴                                   | No. 1 2 3                                                                                                                                                                                         | Avery Spiders & Griddles65@65&55 Avery Kettles                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 70&10@                                                 | No. 1 9 3 10 20 80                                                                                                                                                                                | Never Break Spiders and Griddles.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 90&40@\$<br>.80&25@\$<br>8.70&10@\$                    | Toulan.                                                                                                                                                                                           | Never Break Kettles                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 80 £ 10 @ \$                                           | Miscellaneous-                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| are for<br>a 5% is given<br>ra 10£ 1% on               | Flax Twine BC B. No. 9, 14 and 14-lb. Balls22c 26c                                                                                                                                                | Silver Plated Hollow-<br>William Rogers Mfg. Co40&109                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 9-                                                     | No. 9, ¼ and ¼-lb. Balls \$2c                                                                                                                                                                     | Washboards-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 90d 7 tens<br>E. Mfg.                                  | Undie Line, Cutton, 72-10, Dates                                                                                                                                                                  | The state of the s |
| Alla JULIA.                                            | Cotton Mops, 6, 9, 12 and 15 lb. to                                                                                                                                                               | Crescent, fardly size, bent frame. \$3.00 fed Star, laundry size, stationary protector                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| .50d 10@60s                                            | dos                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| .80d 10@601                                            | Cotton Wranning, 5 Ralls to Ib                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| .50df 10@60g<br>30-gal. \$3,20                         | Cotton Wrapping, 5 Balls to lb 104c@  American t-Ply Hemp, 4 and 4-lb.                                                                                                                            | Wilson, family size, bent frame                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 30-gal. \$3.20<br>30-gal., \$4.00<br>\$3.59            | Cotton Wrapping, 5 Balls to lb 104c@  American t-Ply Hemp, 4 and 4-lb.                                                                                                                            | Wilson, family size, bent frame\$4.73                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 30-gal. \$3.20<br>30-gal. \$4.00<br>\$3.54<br>1\$4.25  | Cotton Wrapping, 5 Balls to 1b                                                                                                                                                                    | Wilson, family size, bent frame\$4.73                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 30-gal. \$3.20<br>30-gal. \$4.00<br>1                  | Cotton Wrapping, 5 Balls to lb                                                                                                                                                                    | Wilson, family size, bent frame 4.7. Single Zinc Surface: Nalad protector, family size, open back perforated                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 30-gal. \$3.20<br>30-gal. \$4.25<br>1\$4.25<br>1\$4.25 | Cotton Wrapping, 5 Balls to lb                                                                                                                                                                    | Wilson, family size, bent frame                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

| Leather, Axle— Solid                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Was                          | shers-                                                                                                         |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|----------------------------------------------------------------------------------------------------------------|
| Solid                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                              | Leather, Axle-                                                                                                 |
| Ile 18c 18c 18c per 100 Iron or Steel - Size bolt 5-16 34 34 94 94 Washers \$5.60 k.70 3.0 3.00 3.00 In lots less than one keg add 34c per lb, 5-lb boxes add 3c to list. Cast washers Over ½ inch. barrel lots per lb., 2c Washer Cutters See Cutters. Washer. Washing Machines See Machines. Washing. Water Coolers See Coolers. Water. Weaners Tyler's New Ha'ter No. 1 % doz. \$3.45: No. 2, \$3.70; No. 3, \$4.00; No. 3, \$1.30 Tyler's Steev No. 1 nd. 2, \$4 doz. \$1.70; No. 3, \$2.00; No. 4, \$2.30.                                               | Solid                        | 80&10&10@85%                                                                                                   |
| Ile 18c 18c 18c per 100 Iron or Steel - Size bolt 5-16 34 34 94 94 Washers \$5.60 k.70 3.0 3.00 3.00 In lots less than one keg add 34c per lb, 5-lb boxes add 3c to list. Cast washers Over ½ inch. barrel lots per lb., 2c Washer Cutters See Cutters. Washer. Washing Machines See Machines. Washing. Water Coolers See Coolers. Water. Weaners Tyler's New Ha'ter No. 1 % doz. \$3.45: No. 2, \$3.70; No. 3, \$4.00; No. 3, \$1.30 Tyler's Steev No. 1 nd. 2, \$4 doz. \$1.70; No. 3, \$2.00; No. 4, \$2.30.                                               | Patent                       |                                                                                                                |
| Size bolt 6-16 34 36 36 34 34 34 34 34 34 34 34 34 34 34 34 35 3.00 3.00 3.00 3.00 3.00 3.00 3.00 3                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Coil:                        | 7/4 1 11/4 11/4 Inch.<br>11c 18c 18c 15c per 100                                                               |
| Washers\$5.60 k.70 \$.0 \$.30 \$.00 \$.00 ln lots less than one keg add \( \frac{1}{2} \) c per lb., 5-lb. boxes add \( \frac{1}{2} \) c to list.  Cast washere— Over \( \frac{1}{2} \) inch. barrel lots, per lb., \$c\$  Washer Cutters— See Cutters. Washer.  Washing Machines— See Machines— See Machines. Washing.  Water Coolers— See Coolers. Water.  Weaners— Tyler's Now Hatter—No.1 \( \frac{1}{2} \) doz. \$3.45: No. 2, \$3.70; No. 3, \$1 '0; No. \$1.31  Tyler's SytevNos. 1 \( nd 2, \frac{1}{2} \) doz. \$1.70; No. 3, \$2.00; No. 4, \$2.30. |                              | Iron or Steel -                                                                                                |
| Washer Cutters— See Cutters, Washer.  Washing Machines— See Machines, Washing.  Water Coolers— See Coolers, Water,  Weaners— Tyler's Now Hatter—No.1 % doz. \$3.45: No.2, \$3.70; No.3, \$4.00; No. \$1.31 Tyler'sSyfety-Nos.1 nd 2, \$4 doz.\$1.70; No.3, \$2.00; No. 4, \$2.30.                                                                                                                                                                                                                                                                             | Washer<br>In lots<br>lb., 5- | rs\$5.60 4.70 3.0 3.70 3.00 less than one keg add 4c per lb. boxes add 4c to list.  Cast washers—              |
| Sec Cutters, Washer.  Washing Machines— See Machines, Washing.  Water Coolers— See Coolers, Water,  Weaners— Tyler's New Ha'ter— No. 1 \$\pi\$ doz. \$3.45: No. 2, \$3.70; No. 3, \$4.00; No. \$1.81 Tyler'sSyfev—Nos. 1 nd 2, \$\pi\$ doz.\$1.70; No. 3, \$2.00; No. 4, \$2.30.                                                                                                                                                                                                                                                                              |                              |                                                                                                                |
| Washing Machines— See Machines, Washing.  Water Coolers— See Coolers. Water.  Weaners— Tyler's New Ha'ter—No.1 \$\pi\$ doz. \$3.45: No. 2, \$3.70; No. 3, \$1.70; No. \$1.3)  Tyler'83-fetty—Nos.1 nd 2, \$\pi\$ doz. \$1.70; No. 3, \$2.00; No. 4, \$2.30.                                                                                                                                                                                                                                                                                                   |                              |                                                                                                                |
| See Machines, Washing.  Water Coolers— See Coolers. Water.  Weaners— Tyler's New Ha'ter—No. 1 \$\pi\$ doz. \$3.45: No. 2, \$3.70; No. 3, \$1.70; No. \$1.3)  Tyler'83*feiv—Nos. 1 nd 2, \$\pi\$ doz. \$1.70; No. 3, \$2.00; No. 4, \$2.30.                                                                                                                                                                                                                                                                                                                    |                              |                                                                                                                |
| Water Coolers—<br>See Coolers, Water,<br>Weaners—<br>Tyler's New Ha'ter— No.1 ₹ doz. \$3.45:<br>No. 2, \$3.70; No. 3, \$1*0; No. \$1.3;<br>Tyler'83 feev—Nos. 1 nd 2, ₹ doz. \$1.70;<br>No. 3, \$2.00; No. 4, \$2.30.                                                                                                                                                                                                                                                                                                                                         |                              |                                                                                                                |
| Tyler's New Ha <sup>tter</sup> – No. 1 % doz. \$3.45:<br>No. 2, \$3.70; No. 3, \$4.40; No. \$1.31<br>Tyler'aSafetv – Nos. 1 nd 2, \$4 doz.\$1.70;<br>No. 3, \$2.00; No. 4, \$2.30.                                                                                                                                                                                                                                                                                                                                                                            | Wa                           | ter Coolers-                                                                                                   |
| Tyler's New Ha <sup>tter</sup> – No. 1 % doz. \$3.45:<br>No. 2, \$3.70; No. 3, \$4.40; No. \$1.31<br>Tyler'aSafetv – Nos. 1 nd 2, \$4 doz.\$1.70;<br>No. 3, \$2.00; No. 4, \$2.30.                                                                                                                                                                                                                                                                                                                                                                            | Wes                          | ners-                                                                                                          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Tyler's<br>No. 2,<br>Tyler's | New Ha'ter— No. 1 % doz. \$3.45:<br>\$3.70; No. 3, \$4.00; No. 1 \$1.30<br>safety—Nos. 1 and 2, % doz. \$1.70; |
| Wedges-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                              |                                                                                                                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                              |                                                                                                                |
| Oil Finish                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Oil Fin                      | ish                                                                                                            |

| Weights, Sash  Eastern prices                                                                                                           | Copper, list Feb. 28, '96       |
|-----------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|
| 8-in., \$1.65@1.75; 10-in., \$2.07@2.70; 12-in., \$2.50@2.75; 11-in., \$1.25; 6\tau-los Wire and Wire Goods  Brt. and Ann., 6\tau-los 9 | Painted Screen Cloth per 10 Ift |
| Tinned, 19 to 26                                                                                                                        | Case lots                       |

| ١ | Stubs' Steel Wire\$6.00 to £. 40% Wire Clothes Line, see Lines.                                           |
|---|-----------------------------------------------------------------------------------------------------------|
| l | Wire Picture Cord, see Cord. Bright Wire Goods-                                                           |
| ١ | Iron and Brass, list July 1, 1899<br>85&10@85&10&10%                                                      |
| ١ | Wire Cloth and Netting-                                                                                   |
|   | Galvanized Wire Netting30410&5&2%<br>Painted Screen Cloth per 101ft<br>\$1.30@1.40                        |
|   | Hardware Grade, Iron: 2 to 30 mesh                                                                        |
| - | Galv Hardware Grade, 8 to 8 menh<br>8q. ft. 1@1160                                                        |
| Ì | Wire Barb-See Trade Report.                                                                               |
| - | Wire, Rooe-See Rope, Wire.                                                                                |
|   | Agricultural         .70&10@.75%           Ca-e lots         .75&10%           Baxter's S         .60&10% |
|   | Coes' Genuine                                                                                             |
|   | Ac ne                                                                                                     |

| -   |                                               |
|-----|-----------------------------------------------|
|     | Bemis & Call's:                               |
| 1   | Adjustable S                                  |
| 1   | Adjustable S Pine40%                          |
| 1   | Brigg's Pattern                               |
| - ] | Combination Black40&5%                        |
| -1  | Combination Bright 475                        |
| 1   | Cylinder or Gas Pipe55%                       |
|     | Extra Heavy45%                                |
|     | Merrick's Pattern505                          |
|     | No. 3 Pipe, Bright551                         |
|     | Rindley Automatic30%                          |
|     | Boardman's                                    |
| ч   | Bull Doz, W. & B                              |
| - 1 | Donohue's Engineer40&10\$                     |
| ı   | Eagle50&10¢                                   |
| 1   | Hercules70%                                   |
|     | Solid Handles, P. S. & W 50&10\$              |
|     | Stevenson60&10&10\$                           |
|     | Wrought Goods-                                |
| ч   |                                               |
|     | Stanles, Hooks, &c., list March 17            |
|     |                                               |
| - 1 | Yokes, Neck-                                  |
| 1   | Covert Saddlery Works, Telmme 1.60 253        |
|     | Covert Saddlery Works, Neck Yoke              |
|     | Centers 70%                                   |
|     | Yokes, Ox, and Ox Bows-                       |
|     |                                               |
|     | Fort Malison's Farmers & Freighters' list net |
|     | Zinc-                                         |
|     | Sheet                                         |
|     | THE CO                                        |

#### PAINTS, OILS AND COLORS.—Wholesale Prices.

| Lead, Foreign white, in Oil 74@ 9%                                 |  |
|--------------------------------------------------------------------|--|
| Lead, American White, in Oil:<br>Lots of 500 D or over             |  |
| Lots less than 500 B @ 634                                         |  |
| Lead, White, in oil, 25 % tin                                      |  |
| palls, add to keg price @ 16                                       |  |
| Lead, White, in oil, 12% & tin                                     |  |
| palls, add to keg price                                            |  |
| sorted tins, add to keg price @ 1%                                 |  |
| Lead White Dry in bhis                                             |  |
| Lead. American, Terms: On lots of 500                              |  |
| lbs, and over, 60 days, or 2% for cash if                          |  |
| paid in 15 days from date of invoice.                              |  |
| Zinc, American, dry # 5 44@ 48f<br>Zinc, Paris, Red Seal, dry @ 85 |  |
| Zinc, Paris, Rea Seal, dry                                         |  |
| Zinc, Antwerp Red Seal, dry @ 734                                  |  |
| Zinc, Antwerp, Green Seal, dry @ 834                               |  |
| Zinc, V. M. French, in Poppy Oil,                                  |  |
| Green Seal:                                                        |  |
| Lots of 1 ton and over                                             |  |
| Zinc. V. M. French, in Poppy Oil,                                  |  |
| Red Seal:                                                          |  |
| Lo s of 1 ton and over10%@11%                                      |  |
| Lots of less than 1 ton 11@1114                                    |  |
| DISCOUNTS V M. French Zinc Dis-                                    |  |
| counts to buyers of 10 bb!, lots of one or                         |  |
| assorted grades, 1%; 25 bbis., 2%; 50 bbis., 4%.                   |  |
|                                                                    |  |
| Dry Colors.                                                        |  |
| Black, Carbon B 8 @20                                              |  |
| Black, Drop, Amer                                                  |  |
| Black, Ivory                                                       |  |
| Lamp, Com 3 @ 5                                                    |  |
| Blue, Celestial B b 514@ 8                                         |  |
| Blue, Chinese                                                      |  |
| Blue Prussian                                                      |  |
| Blue, Ultramarine 3 @35                                            |  |
| Brown, Spanish                                                     |  |
| Brown, Vandyke, Foreign 24@ 34                                     |  |
| Carmine, No. 40 # 10 #2.15 @2.75                                   |  |
| Green, Chrome, ordinary 5 @ 6                                      |  |
|                                                                    |  |
|                                                                    |  |

White Lead, Zinc, &c.

| Green Chrome, pure.   18   29   Lead. Bod, bolis and segs:   Lots 50 b or over   6   64   Litharge, bblis, by bbls, and segs:   6   64   Litharge, bblis, by bbls, and segs:   6   64   Lots less than 50 b   6   64             |    |                                                          |                                        |                                            |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|----------------------------------------------------------|----------------------------------------|--------------------------------------------|
| Lots 500 b or over. 6 6 84 Lots test stans 500 b 6 6 86 8 8 6 8 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |    |                                                          | Brown, Vandyke 916213                  | Linseed, State and West'n, raw @79         |
| Litharge, bbls. 'g bbls. and segs: Lots 500 b or over.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 6  | Lots 500 h or over @ 614                                 | Green, Paris                           | Liuseed raw Calcutta see 1 285             |
| Lots 500 b or over. 6 6 64 Lots 100 b or over. 6 6 64 Cocher, French Washel 14 6 5 Ocher, French Washel 14 6 5 Ocher, American 2 ton 310, 00 615, 00 Orange Mineral English. 2 b 8 5 61045 Orange Mineral French 1 1 6115 Orange Mineral American 84 6 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | -( | Lots less than 500 b @ 6%                                | Sienna, Raw                            | Lard, Extra No. 1                          |
| Cocher, Datch Washe   144   5   5   6   6   6   6   6   6   6   6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | V. | Lots 500 h or over @ 614                                 | Umber, Raw 954 a12                     | Lard, No. 1 41 @44                         |
| Ocher, American,   2 ton   3 to   0.00 s   5.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 6  | Lots less than 500 h 66 64                               | Umber, Burnt 94412                     | Collon-seed Shanner Valler                 |
| Ocher, American                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | •  | Ocher, Datch Washe i 44 2 5                              |                                        | prune                                      |
| Second   Containe Mineral, French   1   1   1   1   1   1   1   1   1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |    | Ocher, American 2 ton \$10.00 315.00                     | Miscellaneous.                         | Cotton-send Summer Vellow.                 |
| Orange Mineral, American   84   84   84   84   84   84   84   8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 6  |                                                          | Barytes, Foreign, # ton \$19.00 @21.00 | Sperm, Crude a                             |
| Red. Indian, American                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 4  | Orange Mineral, German 856 a 837                         | Barytes, Amer. doate 1 19.00 920.00    | Sperin, Natural Spring @                   |
| Red. Indian. American   3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0  | Orange Mineral, American 814 @ 816                       |                                        | Sperm, Bleached Spring                     |
| Red. Turkey, English.   4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |    | Red, Indian, English 446 846                             |                                        | Sperm, Bleached Winter 62 to               |
| Real   Venetian   Amer.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 4  | Red, Turkey, English 4 @ 6                               | China Clay, English w ton 18.00 a17.50 | Whale, Crude                               |
| Real Venetian, English & b.   1,80@2.10     Slenna, Italian, Burnt and   Powdered   # b   34@ 04     Slenna, American, Burnt and   Powdered   # b   1,80@2.10     Slenna, American, Burnt and   Powdered   # b   1,80@2.10     Terra Alba, American   # 100 b   81.25 @61.00     Terra Alba, English   95 @1.00     Terra Alba, English   95 @1.00     Terra Alba, American No. 1   # 6 @70     Terra Alba, American No. 1   # 6 @70     Terra Alba, American No. 1   # 6 @70     Terra Alba, American No. 2   # 6 @70     Terra Alba, American No. 1   # 6 @70     Terra Alba, American No. 2   # 6 @70     Terra Alba, American          | 2  | Red, Tuscan, English 7 @10                               |                                        | Whale Rieached Winter                      |
| Sienna, Italian, Burnt and Powdered   19                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 16 | Red Venetian English & to 1.80 22 10                     | Whiting, Gilders54 g .64               | Menhaden, Crude, Sound 25 a 26             |
| Selenna, Ital., Raw, Powel.   3   6   7   7   8   8   8   1   6   9   7   8   8   8   8   8   8   9   8   8   9   8   8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 4  | Sienna, Italian, Burnt and                               | Whiting, extra Gilders'559 .68         | Menhaden, Light Strane 1 29 @39            |
| Sienna, American, Raw                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |    | Powdered by 3 % 9%                                       |                                        | Menhaden, Ex Bleached Winter 4037          |
| Powdered                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 6  | Slenna, American, Raw 14@ 2                              | Putty.                                 | Tallow, prime                              |
| Talc, French. \$ 100 h \$ 125 cm. 00   10   10   10   10   10   10   10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 4  | Sienna, American, Burnt and                              |                                        | Cocoanut Cochin                            |
| Terra Alba, French, # 100 2 95 61.00 Terra Alba, English 95 61.00 Terra Alba, American No. 1. #5 670 Umber, Turkey, Bat. & Pow. # \$ 2 96 3 96 Umber, Turkey, Bat. & Pow. # \$ 2 96 3 96 Umber, Turkey, Bat. & Pow. # \$ 2 96 3 96 Umber, Turkey, Bat. & Pow. # \$ 2 96 3 96 Umber, Turkey, Bat. & Pow. # \$ 2 96 3 96 Umber, Turkey, Bat. & Pow. # \$ 2 96 3 96 Umber, Turkey, Bat. & Pow. # \$ 2 96 3 96 Umber, Rut. Amer. 1 196 2 Yellow, Chrome 105/625 Vermillon, American Lead. 10 625 Vermillon, Quicksilver, bulk 672 Vermillon, Quicksilver, bulk 672 Vermillon, Chrose 88 695  Colors in Oil. Black, Lampblack 10 614 Blue, Chinese 36 640 Blue, Prussian 32 638  Animal, Fish and Vege- table Oils.  Col, Newfoundiand 38 637 Red Saponfiled. 9 3 4266 Red Elaine. 39 6 Red Saponfiled. 9 3 4266 Red Saponfiled. 9 3 426 |    |                                                          | In blidders 2.40                       | Cod, Domestic 31 @33                       |
| Terra Alba, American No. 1. 45 670 Terra Alba, American No. 2. 45 650 Umber, Turkey, But. & Pow. & B. 2 46 34 Umber, Turkey, But. & Pow. & B. 2 46 34 Umber, But. Amer. 1 46 2 Yellow, Chrome 105/825 Vermillon, American Lead. 10 625 Vermillon, Quicksilver, nulk. 672 Vermillon, Quicksilver, nulk. 673 Vermillon, English, Import. 80 695 Vermillon, Chrose 88 695  Colors in Oil. Black, Lampblack. 10 614 Blue, Chinese. 36 640 Blue, Prussian. 32 633 Blue, Chinese. 36 640 Blue, Prussian. 32 633 Blue, Chinese. 36 640 Blue, Prussian. 32 633                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 3  | Talc, American                                           |                                        | Cod, Newfoundland                          |
| Terra Alba, American No. 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 8- | Terra Alba, French, \$\vert 100 \mathbf{T} \ . 95 \@1.00 |                                        | Red Saponified 39 6                        |
| Terra Alba, American No. 2. 45 650   Umber, Turkey, Raw & Powd. 254 346   Umber, Turkey, Raw & Powd. 254 346   Umber, Rut. Amer. 156 2   Yellow, Chrome 105/25   Vermillon, American Lead. 10 625   Vermillon, Quicksilver, nuk. 672   Vermillon, Quicksilver, nuk. 672   Vermillon, Chinese. 88 695   Colors in Oil.   Black, Lampblack. 10 614   Blue, Chinese. 36 640   Blue, Prussian. 36 636   Blue, Prussian. 36 636   Colors in Oil.            |    | Terra Alba, American No. 165 @70                         | Spirits Turpentine.                    | Olive, Italian, bbis 57 @63                |
| Umber, Turkey, Raw & Powd. 246 3 34 Umber, But. Amer. 146 3 Umber, Raw, Amer. 146 3 Yellow, Chrome 105/825 Vermillon, American Lead. 10 625 Vermillon, Quicksilver, nulk. 672 Vermillon, Quicksilver, nulk. 672 Vermillon, Chrinese. 88 695 Vermillon, Chrinese. 88 695 Colors in Oil.  Black, Lampblack. 10 614 Blue, Chinese. 36 640 Blue, Prussian. 32 638 Blue, Chinese. 36 640 Blue, Prussian. 32 638 Prach. 12 640 Parafine, 903-907 gravity. 143 6154 Parafine, 903-907 gravity. 144 6155 Parafine, 903-907 gravity. 144 6155 Parafine, 903-907 gravity. 144 6155 Parafine, 903-907 gravity. 124 6155 Parafine, 903-907        | U  | Terra Alba, American No. 245 @50                         | In Southern bbls                       | Palm prime Lagar 48 @51                    |
| Umber, But. Amer.   15@ 3   Yellow, Chrome   15@ 25   Yellow, Chrome   105@ 25   Vermillon, American Lead.   10 @ 25   Vermillon, Quicksilver, butk   672   Vermillon, Quicksilver, butk   672   Vermillon, Chinese   88 @ 95   Extra White   13 @ 156   test.   20 gravity, 25@ 30 cold   test.   20 gravity, 25@ 30 cold   test.   20 gravity, 15 cold test.   20 gravity, 15 cold test.   20 gravity, 15 cold test.   20 gravity, 15 cold test.   20 gravity, 15 cold test.   20 gravity, 15 cold test.   20 gravity, 15 cold test.   20 gravity, 15 cold test.   20 gravity, 15 cold test.   20 gravity, 15 cold test.   20 gravity, 15 cold test.   20 gravity, 15 cold test.   20 gravity, 15 cold test.   20 gravity, 15 cold test.   20 gravity, 15 cold test.   20 gravity, 15 cold test.   20 gravity, 15 cold test.   20 gravity, 15 cold test.   20 gravity, 15 cold test.   20 gravity, 15 cold test.   20 gravity, 15 cold test.   20 gravity, 15 cold test.   20 gravity, 15 cold test.   20 gravity, 15 cold test.   20 gravity, 15 cold test.   20 gravity, 15 cold test.   20 gravity, 15 cold test.   20 gravity, 15 cold test.   20 gravity, 15 cold test.   20 gravity, 15 cold test.   20 gravity, 15 cold test.   20 gravity, 15 cold test.   20 gravity, 15 cold test.   20 gravity, 15 cold test.   20 gravity, 15 cold test.   20 gravity, 15 cold test.   20 gravity, 15 cold test.   20 gravity, 15 cold test.   20 gravity, 15 cold test.   20 gravity, 15 cold test.   20 gravity, 15 cold test.   20 gravity, 15 cold test.   20 gravity, 15 cold test.   20 gravity, 15 cold test.   20 gravity, 15 cold test.   20 gravity, 15 cold test.   20 gravity, 15 cold test.   20 gravity, 15 cold test.   20 gravity, 15 cold test.   20 gravity, 15 cold test.   20 gravity, 15 cold test.   20 gravity, 15 cold test.   20 gravity, 15 cold test.   20 gravity, 15 cold test.   20 gravity, 15 cold test.   20 gravity, 15 cold test.   20 gravity, 15 cold test.   20 gravity, 15 cold test.   20 gravity, 15 cold test.   20 gravity, 15 cold test.   20 gravity, 15 cold test.   20 gravity,          |    | Umber, Turkey, But, & Powd 256 35                        |                                        | raim, prime, bages 9 5 3 4 9               |
| Vellow, Chrome                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |    | Umber, But. Amer 114@ 2                                  |                                        |                                            |
| Vermillon, American Lead.   10   625                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |    | Umber, Raw, Amer 116@ 2                                  | Glue.                                  | Mineral Oils.                              |
| Vermilion, Quicksilver, hazs. 673                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |    | Vermillon, American Lead 10 @25                          |                                        |                                            |
| Vermillon, English, Import   80   695   Extra White   18   623   Extr          |    | Vermilion, Quicksilver, milk @72                         | Medium White                           | Black, 20 gravity, 25,330 cold             |
| Vermillon Chinese                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |    |                                                          | Extra White                            | Black, 29 gravity, 15 cold test, 103/@1112 |
| Colors in Oil.   Animal, Fish and Vege   Cylinder, dirk litered   113(216)     Bluck, Lampblack   10 @14     Bluc, Chinese   36 @40     Bluc, Prasslan   32 @33     Braffine, 903 gravity   124 @134     Paraffine, 903 gravity   124 @134     Paraffine, e, 883 gravity   124 @134     Paraffine, e, etc., No. 1   144 @154     Paraffine, et          |    | Vermillon. Chinese 88 @95                                |                                        | Crinder light altered                      |
| Black, Lampblack   10   614   Animal, Fish and Vege   Paramine, 903-907 gravity, 143 (615)   Blue, Chinese   36   640   table Oils   Paramine, 903-907 gravity, 133 (614)   Paramine, 903-907 gravity, 134 (615)   144 (615)   Paramine, ed. No. 1            |    | Colore In Oil                                            | 11130134910                            | Cylinder, durk filtered 1132@1412          |
| Blue, Chinese                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 12 |                                                          | Animal, Fish and Vege-                 | Paramae. 903-907 gravity 143/@1517         |
| Ditte, Prassian                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 3  |                                                          | table Oils                             | Parafflue, 883 gravity 18%@141             |
| Bine, Ultramarine                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 5  | Blue, Prussian32 @38                                     |                                        | Paramne, red, No. 1 148/@1512              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |    | Biue, Uttramarine13 @16                                  | ынвеец, Спу, гам # gat. 75 476         | In small lots 16 advance.                  |

|                                             | Animal, Fish and Veger<br>table Oils.                                                                                      |
|---------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|
|                                             | Low Grade. # 512 315;<br>Cabinet 13 3416;<br>Medium White 144 316;<br>Extra White 18 623<br>French 12 640<br>Irish 13 4316 |
| 6                                           | In machine bols                                                                                                            |
| 0                                           | Spirits Turpentine.                                                                                                        |
| 0                                           | In buts                                                                                                                    |
| 10/10/                                      | Putty.                                                                                                                     |
| 0                                           | Whiting, Common # 100 h .42 g .5. Whiting, Gilders54 g .6. Whiting, extra Gilders55 g .6.                                  |
| 101-05-05-05-05-05-05-05-05-05-05-05-05-05- | Barytes, Foreign, # ton\$15.00 a21.0 Barytes, Amer. doate i 19.00 a20.0 Barytes, Cride                                     |
| 0                                           | Miscellaneous.                                                                                                             |
| 1 1 0                                       | Umber, Raw 914 512<br>Umber, Burnt 9/4 613                                                                                 |
| 4                                           | Green, Curo ne. 8 @12<br>Green, Paris 6624<br>Stenna, Raw. 10 6613<br>Stenna, Burnt 10 5613                                |
| - 1                                         | Brown, Vandyke 91/2013                                                                                                     |

| 11003.                                                                                    |                                               |
|-------------------------------------------------------------------------------------------|-----------------------------------------------|
| Linseed, City, boile I                                                                    | @78<br>@79<br>@85<br>@85<br>@89<br>@44<br>@33 |
| Cotton-seed Summer Yellow,                                                                | @354                                          |
| off grades                                                                                | @8314                                         |
| Sperm, Crude                                                                              | 66                                            |
| Sperm, Natural Spring                                                                     | (d)                                           |
| Sperm, Bleached Spring                                                                    | @                                             |
| Sper n. Natural Winter                                                                    | 149 .                                         |
| Whate Cante                                                                               | (40                                           |
| Whale, Crude.<br>Whale, Natural Winter                                                    | @17                                           |
| Whale, Bleached Winter                                                                    | @19                                           |
| Menhaden, Crude, Soun I 25<br>Menhaden, Light Strane I 29<br>Menhaden, Bleached Winter 35 | g 28                                          |
| Monhadon Planchad Winter 29                                                               | @39                                           |
| Menhaden, Ex Bleached Winter 35                                                           | (1)                                           |
| Tallow, prime                                                                             | 4037<br>@32                                   |
| Cocoanut, Ceylon55                                                                        | 42 584                                        |
| Cocoanut Cochin 63                                                                        | LO RIL                                        |
| Cocoanut, Cochin                                                                          | @33                                           |
| Cod. Newfoundland 36                                                                      | @37                                           |
| Red Elaine                                                                                | (a) .                                         |
| Red Elaine                                                                                | 60 5                                          |
| Olive, Italian, bbls                                                                      | @63                                           |
| Neatsfoot, prime48                                                                        | @51                                           |
| Palin, prime, Lagos 2 5                                                                   | 101                                           |
| Mineral Oils.                                                                             |                                               |
|                                                                                           |                                               |
| Black, 20 gravity, 25,330 cold                                                            |                                               |
| test Wgal. 9                                                                              | 10101                                         |
| Black, 29 gravity, 15 cold test. 10                                                       | 5001114                                       |
| Black, sum ner 91                                                                         | 40 997                                        |
| Cylinder, light filtered 14                                                               | 40174                                         |
| Cylinder, dark filtered 11                                                                | 1016                                          |
| Paraffine. 903-907 gravity 14                                                             | 10151                                         |
| Paraffine, 903 gravity 18                                                                 | %@14\                                         |
| Down M. o. 999 consulter 10                                                               |                                               |

#### THE IRON

The oldest paper in the world devoted to the interests of the Hardware, Iron, Machinery and Metal Trades, and a standard authority on all matters relating to those branches of industry.

#### RATES OF SUBSCRIPTION: INCLUDING POSTAGE. UNITED STATES AND BRITISH AMERICA.

| Regular Edition, Issued every THURSDAY morning,         |                    |                     |          |        |               | \$5.00 a year  |
|---------------------------------------------------------|--------------------|---------------------|----------|--------|---------------|----------------|
| Two Dollar Edition, large number FIRST and THIRD THUS   |                    |                     |          |        |               | 2.00 11        |
| Dollar Edition, large number FIRST THURSDAY of every mo | onth, Bulletin num | nber each interveni | ng Thurs | day, - | -             | 1.00 4         |
| RATES OF                                                | ADVER              | TISING:             | ONE I    | NCH.   |               |                |
| ONE INSERTION, \$                                       |                    | SIX MONTHS          | -        |        |               | \$45.00        |
| ONE MONTH, (5times) 1                                   | 1.25               | ONE YEAR,           |          |        |               |                |
| THREE MONTHS, 2                                         | 6.25               | Rates for large     | er spac  | es quo | ted on ap     | plication.     |
| New York (Main Office), - 232-238 Will                  | iam Street,        | who E worth Commit  |          | DAVI   | D WILLIAM     | S CO., Pub'rs. |
| Philadeiphia, Forrest Build                             | ing, 117 119 500   | Sigh Avenue         |          | Popula | IS HOBSON, M  | anager.        |
| Pittsburgh, Hamilton Bu                                 | inding, 335-337 i  | neu Avenue,         |          | (H H   | RODERTS Rus   | iness Manager. |
| Chicago, Fisher Buildi                                  | ing, Dearborn an   | d Van Baren Stree   | 13,      | GEO. V | V. COPR. Resi | ident Asso. Rd |
| Cincinnati Pickering Bu                                 | ilding, 5th and M  | Main Streets        |          | HENRY  | SMITH, Man    | ager.          |
| St. Louis Chemical Bu                                   | uilding, 721 Olive | Street              |          | C. F.  | WIELAND, Ma   | nager.         |
|                                                         |                    | reet,               |          |        |               |                |
| Cleveland, The Cuyaho                                   | ga, 311 Superior   | Street,             |          | EZRA S | S. ADAMS, Ma  | nager,         |
| BRITISH AGENCY: Office of                               | The Ironmonger,    | , 42 Cannon Street, | London   |        |               |                |

AUSTRALIAN OFFICES: Melbourne, Hardware Chambers, 231 Elizabeth Street; Sydney, Palings Buildiags. Remillances should be made by draft, payable to the order of David Williams Company, on any banking acuse in the United States or Europe, or by P. O. Money Order on New York. When these cannot be obtained, postage stamps of any country will be received.

Newsdealers or Backsellers in any part of the world may obtain The Iron Age through the American News Company, New York, U. S. A.: The International News Company, New York, U. S. A., and London, England: or The San Francisco News Company, San Francisco, Cal., U. S. A. IDON AND STEEL

Common High Beass in the in the the line

# CURRENT METAL PRICES.

NOVEMBER 7, 1900.

Sheet and Bolt-

The following quotations are for small lots. Wholesale prices, at which large lots only can be bought, are given elsewhere in our weekly market report.

| IRON AND STEEL-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 1                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                  | eet                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | and                                                                                                                                                                                                                                                                                                                                                                                                       | Bol                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | t-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                           | Common High Brass. in in.<br>Wider than 26 28                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | in   in.<br>30   32                                                                                                                          | in. in                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | lin.jin.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Bar Iron from Store-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                 | ary 19                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                  | 00.<br>es, ln                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | cents i                                                                                                                                                                                                                                                                                                                                                                                                   | er pou                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | nd.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Net.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                           | and including 28   30                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 32 34                                                                                                                                        | 36 38                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 40                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Common Iron: Duty, Round.0.6¢ # D; Square,0.8¢ # D<br>1 to 174 in. round and square # D 1.65@1.75¢                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                  | She                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | et qo a                                                                                                                                                                                                                                                                                                                                                                                                   | 60.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | _                                                                                                                                                                                         | To No. 20, inclusive39 .42<br>Nos. 21, 22, 23 and 2440 .43<br>Nos. 25 and 2641 .44<br>Nos. 27 and 2842 .45                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 46 .50                                                                                                                                       | .55 .60                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | .65 *                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Refined Iron.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1                                                                                                                                                                | 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 5.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                           | Nos. 25 and 2641 .44<br>Nos. 27 and 2842 .45                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 48 .52                                                                                                                                       | .57 .68                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | .71                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 1 to 176 in. round and square                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                 | than                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | an an                                                                                                                                                            | vier.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 189                                                                                                                                                                                                                                                                                                                                                                                                       | oz.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 30                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 02.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Ni .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 02.                                                                                                                                                                                       | * Special peloes not less than t                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 20 manes                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Rods—% and 11-16 round and square. D 2.10@2.20e Angles:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | i i                                                                                                                                                                                             | 45                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | ir ch                                                                                                                                                            | heav                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | oz.                                                                                                                                                                                                                                                                                                                                                                                                       | 45 8 3 E                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 3 oz.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | P P                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 0 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 8 11                                                                                                                                                                                      | Add 140 P B additional for<br>than Nos. 28 to 38 inclusive. D                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | each n                                                                                                                                       | umber<br>from L                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | thinner<br>ist                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 3 in x ¼ in. and larger                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | wide                                                                                                                                                                                            | longer                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | longer                                                                                                                                                           | fo and heavi                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 85 85                                                                                                                                                                                                                                                                                                                                                                                                     | and and                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | nd r                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | and<br>to 9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | . and 9 02.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | r than                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | t Febru                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 25%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 1 1 to 2 % in. x 3 16 in and thicker 2.106                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Top.                                                                                                                                                                                            | Not 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                  | x 60                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 24 OK. to 32 OZ. 18.                                                                                                                                                                                                                                                                                                                                                                                      | 6 02<br>20 02.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 2. all                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 7%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 202                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Lighter                                                                                                                                                                                   | Wife in Colls,                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                              | mry 20,                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 1000,                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 1 to 1¼ in. x 3-16 in                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                 | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | -                                                                                                                                                                | 38 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2                                                                                                                                                                                                                                                                                                                                                                                                         | - 2 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 120                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 80                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1                                                                                                                                                                                         | Brown & Sharpe's gauge                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Com.                                                                                                                                         | Low                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Gild'g<br>bronze                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| % x \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                 | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | - 4                                                                                                                                                              | 8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | -                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | -                                                                                                                                                                                         | the standard.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | high<br>brass.                                                                                                                               | brass.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | and                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| $\begin{array}{llllllllllllllllllllllllllllllllllll$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Ins.,<br>30<br>30                                                                                                                                                                               | 72                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 2                                                                                                                                                                | 014 201                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 2014                                                                                                                                                                                                                                                                                                                                                                                                      | 2014 21                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 3 22 K                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 233                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 2616 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 19%                                                                                                                                                                                       | All Nos. to No. 10, inclusive                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>\$</b> 0.23                                                                                                                               | \$0.27                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 80.28                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 11n 2.408                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 30<br>36                                                                                                                                                                                        | 72                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 96 2                                                                                                                                                             | 014 201                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 2012                                                                                                                                                                                                                                                                                                                                                                                                      | 20 2 23                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 2012                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 2734                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 30 %                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                           | All Nos. to No. 10, Inclusive<br>Above No. 10 to No. 16<br>No. 17 and No. 18<br>No. 19 and No. 20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | .2316                                                                                                                                        | .28                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | .284                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 1¼ 1u                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 36<br>36<br>36<br>36<br>36<br>48                                                                                                                                                                | 96<br>120                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 72 2<br>96 2                                                                                                                                                     | 012 201                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 2013                                                                                                                                                                                                                                                                                                                                                                                                      | 22 2 23                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 13 7614                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 291/3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                           | No. 21                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | .25<br>.26<br>.27                                                                                                                            | .30                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | .33<br>.34<br>.35                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Channels, Sin. and larger                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 36<br>48                                                                                                                                                                                        | 72                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 890 2<br>2                                                                                                                                                       | 0 2 20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 2112                                                                                                                                                                                                                                                                                                                                                                                                      | 22 2 24                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 14 27 14                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 9036                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                           | No. 94                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | .28                                                                                                                                          | .31                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | .36                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Beams   S   In and larger   S   25   5   5   5   5   5   5   5   5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 48<br>48<br>48                                                                                                                                                                                  | 120                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 72 2<br>96 2                                                                                                                                                     | 0 20 20 20 20 20 20 20 20 20 20 20 20 20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 21 (3                                                                                                                                                                                                                                                                                                                                                                                                     | 3 /3 25<br>24 /3 28                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 3 28%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                           | No. 25<br>No. 26<br>No. 27                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | .32                                                                                                                                          | .34<br>.36<br>.39                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | .38                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| price                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 60<br>60                                                                                                                                                                                        | 78                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 2                                                                                                                                                                | 012 211                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 312                                                                                                                                                                                                                                                                                                                                                                                                       | 3 26                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 31%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                           | No. 27                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | .38                                                                                                                                          | .43                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | .46                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| ## Burden s "H. B & S. Iron, Dase price.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 60<br>60                                                                                                                                                                                        | 120                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 96 2                                                                                                                                                             | 0 2 21                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 2312                                                                                                                                                                                                                                                                                                                                                                                                      | 1612                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                           | No. 28<br>No. 29<br>No. 30                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | .45                                                                                                                                          | .49<br>.52<br>.55                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | .49<br>.46<br>.51<br>.54<br>.62<br>.67                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| · Merchant Steel from Store-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 78<br>78                                                                                                                                                                                        | 96                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 96 2                                                                                                                                                             | 0 4 20 1 20 1 20 1 20 1 20 1 20 1 20 1 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 2312                                                                                                                                                                                                                                                                                                                                                                                                      | 1832                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                           | No. 32                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | .51                                                                                                                                          | .59                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | .67                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Bessemer Machinery                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 72<br>208<br>208                                                                                                                                                                                | 120                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 2                                                                                                                                                                | 12 235                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 29%                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                           | No. 34<br>No. 35                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | .59<br>.64<br>.70                                                                                                                            | .63                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | .89<br>.95<br>1.30                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Bessemer Machinery                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | wider }                                                                                                                                                                                         | 244                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 2                                                                                                                                                                | 4 /3 26 /<br>5 /2 28 /                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 3                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                           | No. 36<br>No. 37                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | .76<br>1.00                                                                                                                                  | .74<br>.80<br>1.04                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 1.50<br>1.70                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| small lots 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                  | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 1                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | - 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                           | No. 33<br>No. 34<br>No. 35<br>No. 36<br>No. 37<br>No. 37<br>No. 38<br>No. 39                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 1.30                                                                                                                                         | 1.34                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 2.00<br>3.25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Soft Steel Sheets-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Bolt Copp<br>Circles, S                                                                                                                                                                         | egmer                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | its a                                                                                                                                                            | ad Pa                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | ttern                                                                                                                                                                                                                                                                                                                                                                                                     | Sheet:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | er. *                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 10 20)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | dvan                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | ice                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 9.111                                                                                                                                        | 2.60                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 5.75                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 3-16 inch                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Cold or H                                                                                                                                                                                       | ard R                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | olle                                                                                                                                                             | d Copp                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | per 1                                                                                                                                                                                                                                                                                                                                                                                                     | os,                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | equa                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | are fo                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | n tro                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | nd                                                                                                                                                                                        | Discount, Brass Wire, 25%; (List November                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Copper 1                                                                                                                                     | Wire, N                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | ET.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 4 Inch.     1.85¢     No. 14.     2.40¢       3-16 Inch.     1.90¢     No. 16.     2.50¢       No. 8.     2.10¢     No. 18.     2.20¢       No. 10.     2.20¢     No. 20.     3.20¢       No. 12.     2.30¢     No. 22.     3.30¢                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Cold or I                                                                                                                                                                                       | Hard                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Roll                                                                                                                                                             | ed Co                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | ppe;                                                                                                                                                                                                                                                                                                                                                                                                      | light                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | er th                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | in 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 4 02.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 事                                                                                                                                                                                         | Spring Wire, 20 P 3 advance.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Sheet Iron from Store.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | All Polisi                                                                                                                                                                                      | hed C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | opp                                                                                                                                                              | er, 20<br>price                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | in. w                                                                                                                                                                                                                                                                                                                                                                                                     | de ai                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | id un                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | der.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 1¢ P                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | D                                                                                                                                                                                         | Tobin Bro<br>Straight, but not turned, Rods,                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Kt. Sh                                                                                                                                       | . diame                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | eter, W                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Black.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Bolt Copp<br>Circles, S<br>over pri<br>Cold or H<br>heavier<br>Cold or I<br>square i<br>All Polisi<br>advance<br>All Polish<br>over the                                                         | e1 Co<br>price                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | for                                                                                                                                                              | Cold                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Rolle<br>Rolle                                                                                                                                                                                                                                                                                                                                                                                            | wide<br>Cop                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | , 2 <i>d</i> ₹                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | BBa                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | dvan                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 100                                                                                                                                                                                       | B. net<br>Finished Piston Rods, % to 2% i                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | n. diame                                                                                                                                     | eter, 🖗                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 20¢                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Common R. G. Cleaned<br>American. American.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                 | PI                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | an                                                                                                                                                               | ishe                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | ea c                                                                                                                                                                                                                                                                                                                                                                                                      | opp                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | er-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                           | Other sizes and extreme length                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 12.1 16                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Nos. 14 to 16                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Сорр                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                  | tom                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | ate                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | _                                                                                                                                                                                         | Duty In Blocks or E                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Nes 14                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Nos. 14 to 16                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 14 os. to s                                                                                                                                                                                     | quare                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | foo                                                                                                                                                              | t and                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | heavi                                                                                                                                                                                                                                                                                                                                                                                                     | er, @ 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | b                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 60                                                                                                                                                                                        | western Spetter                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                              | 434                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | @4.60¢                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| No. 28 \$ b, 3.40 3.50¢                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 12 oz. and<br>10 oz. and                                                                                                                                                                        | up to                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 12                                                                                                                                                               | OZ, TO                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | B                                                                                                                                                                                                                                                                                                                                                                                                         | 3000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | , gr ID                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 27                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 60                                                                                                                                                                                        | Duty: Sheet, S                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 4 P 3.                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Russia, Planished, &c.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 10 oz. and<br>Lighter th<br>Circles les<br>Circles ov                                                                                                                                           | or 13                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | a 8 1                                                                                                                                                            | n. dia                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | meter                                                                                                                                                                                                                                                                                                                                                                                                     | 2¢ ¥                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | th ad                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | iditio                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | nal,                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | OF I                                                                                                                                                                                      | 600 B casks                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                              | 7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <b>%97%</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Patent Planished B D A, 10%; B, 9%; net.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Bottomi                                                                                                                                                                                         | l <sub>t</sub>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | -                                                                                                                                                                | рре                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | оорр                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                           | Duty: Pigs and Bars and Old.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 216e W                                                                                                                                       | 8 P                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Ine and                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Galvanized,                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | E                                                                                                                                                                                               | lard a                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | nd S                                                                                                                                                             | oft Di                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | awn-                                                                                                                                                                                                                                                                                                                                                                                                      | B. & S                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | igo.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | -                                                                                                                                                                                         | Duty: Pigs and Bars and Old,<br>Sheets. 246 @ b.<br>American Pig                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                              | 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 56@ 486#                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | - A                                                                                                                                                              | ast Mo                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | tron 1                                                                                                                                                                                                                                                                                                                                                                                                    | INUU.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | - 1                                                                                                                                                                                       | Bar                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                              | R                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 12/20124                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Nos. 10 to 10 b, 126                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Nos000                                                                                                                                                                                          | 0 to 8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | d 10                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 11.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | anw l                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 18                                                                                                                                                                                        | Pipe                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | *********                                                                                                                                    | ********                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 4760                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Nos. 10 to 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Nos                                                                                                                                                                                             | Base<br>19                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                  | 9 an                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | d 10                                                                                                                                                                                                                                                                                                                                                                                                      | 15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 140 01                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | iv.                                                                                                                                                                                       | 'in Linet Pipe<br>Block Tin Pice                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 12                                                                                                                                           | 60                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 205 06                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Nos. 10 to 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Nos                                                                                                                                                                                             | Base<br>19                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                  | 9 an<br>34<br>1<br>34<br>18                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 10 10 4 8 8                                                                                                                                                                                                                                                                                                                                                                                               | 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 13                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 140 P                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | m ad<br>6<br>m ad                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | IV.                                                                                                                                                                                       | Pipe 'in Lined Pipe. Block Tin Pipe. She t Lead Old Lead in exchange, 3%\$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 12                                                                                                                                           | 60                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 205 06                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Nos. 10 to 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Nos                                                                                                                                                                                             | Base<br>. 13<br>. 14<br>. 17<br>1360                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                  | 9 an<br>14<br>1<br>94<br>18<br>2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 10 10 (#<br>4<br>8<br>8                                                                                                                                                                                                                                                                                                                                                                                   | 19<br>2340                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 19                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 140 P<br>140 P<br>140 P                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | m ad<br>6<br>m ad                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | lv.                                                                                                                                                                                       | 'in Line! Pipe. Block Tiu Pi <sub>1</sub> e. She t Lea! Old Lead in exchange, 3%¢ ?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | ъ.                                                                                                                                           | 10e<br>7 ø                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | .20% off<br>.20% off<br>.20% off                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Nos. 10 to 16.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Nos<br>Nos                                                                                                                                                                                      | Base<br>. 13<br>. 17<br>. 17<br>. 17                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | nle                                                                                                                                                              | 9 an                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | d 10                                                                                                                                                                                                                                                                                                                                                                                                      | 19<br>2346<br>S T                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | ube                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 140 W<br>140 W<br>140 W<br>140 W                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | mad<br>mad<br>o<br>mad                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | lv.                                                                                                                                                                                       | in Line! Pipe                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | ъ.                                                                                                                                           | 7 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Nos. 10 to 16.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Nos                                                                                                                                                                                             | Base<br>13<br>14<br>17<br>134<br>60an<br>d alw                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | nle                                                                                                                                                              | 9 an<br>1<br>34<br>15<br>2<br>Stub                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | d 10                                                                                                                                                                                                                                                                                                                                                                                                      | 19<br>234#<br>8 T                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | ube                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Me po<br>Me po<br>Me po<br>Me po<br>Me po<br>Me po                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | m ad<br>6 m ad<br>0 m ad<br>nerwi                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | lv.                                                                                                                                                                                       | in Line! Pipe. Block Tin Pipe. Block Tin Pipe. Old Lead in exchange, 3%f \$\pi\$ 14 & 36, guaranteed No. 1. Prices of Solder indicated baccording to composition.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | b.                                                                                                                                           | 7 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Nos. 10 to 16.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Nos<br>Standar<br>ordered.<br>Feb. 6.                                                                                                                                                           | 13<br>14<br>17<br>114<br>16<br>1809.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | nle                                                                                                                                                              | 9 and 11 11 11 11 11 11 11 11 11 11 11 11 11                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | d 10                                                                                                                                                                                                                                                                                                                                                                                                      | 19<br>2540<br>8 T                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | u be<br>inless                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Me man                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | m ad<br>6 m ad<br>0 m ad<br>norwi                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | lv.                                                                                                                                                                                       | In Line I Pipe. Block Tin Pipe. Block Tin Pipe. Old Lead in exchange, 3% \$\pi\$  Solder No. 1. Prices of Solder Indicated b according to composition.  Anti mor Duty, 34 \$\pi\$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | b. y priva                                                                                                                                   | 10e                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 20s off<br>20s off<br>20s off<br>20s off<br>20s off<br>20s off                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Nos. 10 to 16.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Nos<br>Nos<br>Standar<br>ordered.<br>Feb. 6,<br>Stubs'<br>W. G.                                                                                                                                 | Base<br>. 13<br>. 17<br>1344<br>. 17<br>1344<br>Gean<br>d alw<br>1800.<br>B. & S<br>W. G                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | nle<br>aya                                                                                                                                                       | 9 an<br>11<br>34<br>12<br>22<br>Stub<br>N                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | d 10                                                                                                                                                                                                                                                                                                                                                                                                      | 10<br>2)40<br>8 T<br>130, 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | u be                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Me was a state of the state of | b ad<br>b ad<br>b ad<br>nerwi                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | lv.                                                                                                                                                                                       | In Line I Pipe. Block Tin Pipe. Block Tin Pipe. Old Lead in exchange, 3% \$\pi\$  2 & 3/6, guaranteed No. 1. Prices of Solder Indicated b according to composition. Antimor Duty, 3/4 \$\pi\$  Cookson. Hallett's.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | b. y priva                                                                                                                                   | 7 #                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 205 off<br>.205 off<br>.205 off<br>.205 off<br>.205 off<br>.205 off<br>.205 off<br>.205 off                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Nos. 10 to 16.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Nos  Standar ordered. Feb. 6.  Stubs' W. G.  4-11 12 13                                                                                                                                         | Base . 13                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | nle<br>aya                                                                                                                                                       | 9 an<br>11<br>34<br>12<br>22<br>Stub<br>N                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | d 10                                                                                                                                                                                                                                                                                                                                                                                                      | 10<br>2)40<br>8 T<br>130, 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | u be                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Me was a state of the state of | b ad<br>b ad<br>b ad<br>nerwi                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 1v.<br>1v.<br>1se<br>13/4<br>24<br>24<br>24                                                                                                                                               | 'in Line! Pipe. Block Tin Pipe. Block Tin Pipe. Old Lead in exchange, 3% \$\pi \)  **Solder No. 1.  **Prices of Solder Indicated b according to composition.  **Antimor Duty, \( \pi \) \$\pi \)  **Cookson.  **Haliett's.  **U. 8.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | y priva                                                                                                                                      | 7 #                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 205 off<br>.205 off<br>.205 off<br>.205 off<br>.205 off<br>.205 off<br>.205 off<br>.205 off                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Nos. 10 to 16.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Nos<br>Nos<br>Standar<br>ordered.<br>Feb. 6.<br>Stubs'<br>W. G.                                                                                                                                 | Base . 13 . 3 . 3 . 3 . 3 . 3 . 3 . 3 . 3 .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | nle<br>aya                                                                                                                                                       | 9 an<br>11<br>34<br>12<br>22<br>Stub<br>N                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | d 10                                                                                                                                                                                                                                                                                                                                                                                                      | 10<br>2)40<br>8 T<br>130, 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | u be                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Me was a state of the state of | b ad<br>b ad<br>b ad<br>nerwi                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 1v.<br>1v.<br>1se<br>23/6<br>24<br>24<br>24<br>24<br>25                                                                                                                                   | In Line! Pipe. Block Tin Pipe. Block Tin Pipe. Old Lead in exchange, 3% \$\pi \text{Lead} \text{Older} \text{No. 1} \text{Solder} \text{No. 1} \text{Prices of Solder indicated b according to composition.} \text{Antimor} \text{Duty, 36 \$\pi \text{No. 1} \text{U. 8}.  Antimor \text{Duty, 36 \$\pi \text{No. 1} \text{Lead} \text{V. 8}.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | b. y priva                                                                                                                                   | 10¢                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 20% off<br>.20% |
| Nos. 10 to 16.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Nos<br>Nos<br>Standar<br>ordered.<br>Feb. 6.<br>Stubs'<br>W. G.                                                                                                                                 | Base 18 17 17 114 18 18 18 18 18 18 18 18 18 18 18 18 18                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | nle<br>aya                                                                                                                                                       | 9 an<br>11<br>34<br>12<br>22<br>Stub<br>N                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | d 10                                                                                                                                                                                                                                                                                                                                                                                                      | 10<br>2)40<br>8 T<br>130, 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | u be                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Me was a state of the state of | b ad<br>b ad<br>b ad<br>nerwi                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 1v.<br>1v.<br>1v.<br>1se<br>23/2<br>24<br>24<br>24<br>24<br>24<br>25<br>25<br>26                                                                                                          | In Line! Pipe. Block Tin Pipe. Block Tin Pipe. Old Lead in exchange, 3% # \$\tilde{\pi} \text{ Colder} \text{ No. 1. } \text{ Colder Indicated b according to composition. } \text{ Antimor Duty, 36 }\text{ Hallett's. } \text{ U.S. } \text{ Aluminu Duty: Crude, 86 }\text{ Pi. Plates. } \text{ 136 }\text{ Piss. } \text{ So. 136 }\text{ Piss. } \text{ Piss. } \text{ So. 136 }\text{ Piss. } \text{ Piss. }                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | b.  y priva  y priva  n  Sheets,                                                                                                             | 10c                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 205 off<br>205 off<br>205 off<br>205 off<br>205 off<br>401756<br>14 vary                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Nos. 10 to 16.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Nos<br>Nos<br>Standar<br>ordered.<br>Feb. 6.<br>Stubs'<br>W. G.                                                                                                                                 | Base . 13 . 17 . 1366 . 17 . 1809. B. & 5 . W. G . 3- 9 . 18 . 18 . 18 . 18 . 18 . 18 . 18 .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | nle<br>aya                                                                                                                                                       | 9 an<br>11<br>34<br>12<br>22<br>Stub<br>N                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | d 10                                                                                                                                                                                                                                                                                                                                                                                                      | 10<br>2)40<br>8 T<br>130, 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | u be                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Me was a state of the state of | b ad<br>b ad<br>b ad<br>nerwi                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 1v.<br>1v.<br>1v.<br>1se<br>23/2<br>24<br>24<br>24<br>24<br>24<br>25<br>25<br>26                                                                                                          | In Line! Pipe. Block Tin Pipe. Block Tin Pipe. Old Lead in exchange, 3% # \$\tilde{\pi} \text{ Colder} \text{ No. 1. } \text{ Colder Indicated b according to composition. } \text{ Antimor Duty, 36 }\text{ Hallett's. } \text{ U.S. } \text{ Aluminu Duty: Crude, 86 }\text{ Pi. Plates. } \text{ 136 }\text{ Piss. } \text{ So. 136 }\text{ Piss. } \text{ Piss. } \text{ So. 136 }\text{ Piss. } \text{ Piss. }                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | b.  y priva  y priva  n  Sheets,                                                                                                             | 10c                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 205 off<br>205 off<br>205 off<br>205 off<br>205 off<br>401756<br>14 vary                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Nos. 10 to 16.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Nos<br>Nos<br>Standar<br>ordered.<br>Feb. 6.<br>Stubs'<br>W. G.                                                                                                                                 | Base . 13 . 17 . 17 . 19 . 18 . 18 . 18 . 18 . 18 . 18 . 18                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | nie                                                                                                                                                              | 9 an 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | et. 7-16                                                                                                                                                                                                                                                                                                                                                                                                  | 10<br>2347<br>8 T<br>120, 1<br>133 31<br>33 31<br>33 31<br>33 32<br>34 33 35<br>34 33 35<br>34 36<br>37 36<br>37 36<br>37 36<br>37 36<br>44 40<br>44 41                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 11 be anless talde   % % %   30 a9 30 a9 30 a9 30 a9 30 a9 31 30 32 31 30 32 34 32 35 34 32 36 39 38 40 39 38 40 39 48 47 47                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Dlan  Mar. 1  | m ad 6 8 8 ad 6 0 m a | 1v.<br>1v.<br>1v.<br>1se<br>23/2<br>24<br>24<br>24<br>24<br>24<br>25<br>25<br>26                                                                                                          | In Line! Pipe. Block Tis Pipe. Block Tis Pipe. Solder Old Lead in exchange, ### \$\footnote{\text{Solder}} \text{No. 1} \text{Lead in exchange, #### \$\footnote{\text{Solder}} \text{No. 1} \text{Prices of Solder indicated be according to composition.}  Antimor Duty, ### \$\footnote{\text{U.S.}} \text{U.S.} No. 1Aluminum (guaranteed or for remelting: Small loss 100-B lots No. 2 Aluminum (guaranteed to the price of t                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | b.  y priva  y priva  ib.  M— Sheets, er 99% p                                                                                               | 10c                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 201 of 20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Nos. 10 to 16  Nos. 21 to 21  Nos. 22 to 24  Nos. 25 to 26  Nos. 25 to 26  Nos. 27  Nos. 26  Nos. 27  Nos. 27  Nos. 27  Nos. 27  Nos. 28  Nos. 27  Nos. 29  Nos. 20     | Nos<br>Nos<br>Standar<br>ordered.<br>Feb. 6.<br>Stubs'<br>W. G.                                                                                                                                 | Base . 13 . 17 . 17 . 18 . 17 . 18 . 17 . 18 . 18                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | nie                                                                                                                                                              | 9 an 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | et. 7-16                                                                                                                                                                                                                                                                                                                                                                                                  | 10<br>2347<br>8 T<br>120, 1<br>133 31<br>33 31<br>33 31<br>33 32<br>34 33 35<br>34 33 35<br>34 36<br>37 36<br>37 36<br>37 36<br>37 36<br>44 40<br>44 41                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 11 be anless talde   % % %   30 a9 30 a9 30 a9 30 a9 30 a9 31 30 32 31 30 32 34 32 35 34 32 36 39 38 40 39 38 40 39 48 47 47                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Dlan  Mar. 1  | m ad 6 8 8 ad 6 0 m a | 1v.<br>1v.<br>1v.<br>1se<br>23/2<br>24<br>24<br>24<br>24<br>24<br>25<br>25<br>26                                                                                                          | In Line! Pipe. Block Tis Pipe. Block Tis Pipe. Solder Old Lead in exchange, 3% \$\pi \)  \[ \lambda \frac{1}{2} \pi \text{ guaranteed} \]  No. 1 \[ \lambda \frac{1}{2} \pi \text{ guaranteed} \]  Prices of Solder indicated b according to composition.  Antimor Duty, \( \frac{1}{2} \pi \)  \[ \lambda \text{ Aluminum} \]  Ookson.  Haltett's.  U. 8.  Aluminum Duty: Crude, \( \frac{1}{2} \pi \)  No. 1 Aluminum (guaranteed or for remelting: Small lots.  100-\$\pi \text{ lots}                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | m — Sheets, or 99% p                                                                                                                         | 10c                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 205 of 20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Nos. 17 to 31  Nos. 27 to 31  Nos. 25 to 24  Nos. 25 to 26  Nos. 27  Nos. 26  Nos. 27  Nos. 27  Nos. 27  Nos. 28  Nos. 29  Nos. 29  Nos. 29  Nos. 29  Nos. 20  Foreign Steel from Store—  Best Cast  Swaged, Cas   | Nos                                                                                                                                                                                             | Base . 13 . 16 . 17 . 18 . 18 . 18 . 18 . 18 . 18 . 18                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 66 67 77 78 88 88 88 88                                                                                                                                          | 9 and 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 110 (# 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4                                                                                                                                                                                                                                                                                                                                                                | 10<br>10<br>2140<br>2140<br>31<br>33<br>31<br>33<br>33<br>33<br>33<br>33<br>33<br>33<br>33<br>34<br>34<br>36<br>35<br>37<br>36<br>37<br>36<br>37<br>37<br>38<br>37<br>38<br>37<br>38<br>38<br>38<br>38<br>38<br>38<br>38<br>38<br>38<br>38<br>38<br>38<br>38                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 11: 9: 14: 14: 14: 14: 14: 14: 14: 14: 14: 14                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 14 P 12 2 2 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | m ad 6 8 m ad 0  | 1V.<br>1V.<br>180<br>24<br>24<br>24<br>24<br>25<br>30<br>31<br>34<br>45<br>39<br>41<br>45                                                                                                 | In Line! Pipe. Block Tis Pipe. Block Tis Pipe. Solder Old Lead in exchange, 3% \$\pi \)  & \( \frac{1}{2} \)  & \(                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | p priva  y priva  y priva  n— Sheets, er 993 p                                                                                               | 10e                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 205 of 20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Nos. 10 to 10  Nos. 12 to 21  Nos. 12 to 21  Nos. 22 to 24  Nos. 22 to 24  Nos. 25 to 26  Nos. 25  Nos. 25  Nos. 25  Nos. 25  Nos. 26  Nos. 27  Nos. 26  Nos. 2   | Nos Nos  Standar ordered. Feb. 6.  Stubs' W. G.  4-II 12 13 14 15 15 15 15 15 15 15 15 15 15 15 15 15                                                                                           | Base 13 13 13 13 13 13 13 13 13 13 13 13 13                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | nie<br>aya<br>14<br>15<br>16<br>16<br>16<br>16<br>16<br>16<br>17<br>17<br>17<br>17<br>18<br>18<br>18<br>18<br>18<br>18<br>18<br>18<br>18<br>18<br>18<br>18<br>18 | 9 an                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | dd 10<br>(#<br># #<br># #<br># #<br># #<br># #<br># #<br># #                                                                                                                                                                                                                                                                                                                                              | 000 000 000 000 000 000 000 000 000 00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 11 9: 4 be annies a talde 4 5 3 4 3 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 14 9 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | m ad 6 m ad 0 m  | 1V.<br>186<br>94<br>94<br>94<br>94<br>95<br>95<br>95<br>95<br>95<br>96<br>97<br>99<br>93<br>34<br>36<br>39<br>47<br>45                                                                    | In Line! Pipe. Block Tis Pipe. Block Tis Pipe. Solder Old Lead in exchange, 35% \$\pi\$ 2.\& 3\pi\$, guaranteed No. 1 Prices of Solder indicated b according to composition.  Antimor Duty, 3\pi \pi  Cookson. Haltett's. U. 8.  Aluminum Duty: Crude, 8\pi \pi. Plates, 13\pi \pi. No. 1 Aluminum (guaranteed or for remelting: Small lots. 100-\pi lots No. 2 Aluminum (guaranteed to ingots for remelting: Small lots. 100-\pi lots Aluminum Sheet, B. & S. gauge. Wider than And including. Nos. 13 to 19                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 12 b.  y priva  ib.  m— ib.  sheets, er 99% p  be ove  50 be o  6-1  144  80                                                                 | 145 to bran 145 to | 366 201 366 201 366 376 366 376 366 376 366 376 366 376 366 376 37                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Nos. 17 to 31  Nos. 17 to 31  Nos. 25 to 31  Nos. 25 to 34  Nos. 25 to 26  Nos. 25 to 26  Nos. 27  No. 27  No. 28  No. 27  No. 28  No. 29  No. 30  No.   | Nos                                                                                                                                                                                             | Base 13 13 13 13 13 13 13 13 13 13 13 13 13                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | nie rays                                                                                                                                                         | 9 an 3 1 1 1 1 1 2 2 2 5 5 E Stub N N N 3 3 4 1 3 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 10 10 (e 4 4 5 8 6 8 8 7 18 8 6 6 5 1 7 15 6 15 6 15 1 1 1 1 1 1 1 1 1 1 1 1 1                                                                                                                                                                                                                                                                                                                            | 10<br>2)4<br>8 T<br>10<br>2)4<br>10<br>2)4<br>10<br>2)4<br>10<br>13<br>33<br>33<br>33<br>33<br>33<br>33<br>33<br>33<br>33<br>33<br>33<br>33                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 19: 93: 44: 44: 43: 42: 42: 42: 42: 42: 42: 42: 42: 42: 42                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 74 8 9 9 9 1 1 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | m ad 6 m ad 00 m ad derwise meter. 23/4 = 25/25/25/25/25/25/25/25/25/25/25/25/25/2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 1v.<br>1v.<br>24<br>24<br>24<br>24<br>24<br>27<br>29<br>31<br>36<br>36<br>37<br>47<br>45                                                                                                  | In Line! Pipe. Block Tis Pipe. Block Tis Pipe. Solder Old Lead in exchange, 35% \$\pi\$ 2.\& 3\pi\$, guaranteed No. 1 Prices of Solder indicated b according to composition.  Antimor Duty, 3\pi \pi  Cookson. Haltett's. U. 8.  Aluminum Duty: Crude, 8\pi \pi. Plates, 13\pi \pi. No. 1 Aluminum (guaranteed or for remelting: Small lots, 100-\pi lots No. 2 Aluminum (guaranteed to ingots for remelting: Small lots, 100-\pi lots Aluminum (guaranteed to ingots for remelting: Small lots, 100-\pi lots Aluminum (guaranteed to ingots for remelting: Small lots, 100-\pi lots Aluminum Sheet, B. & S. gauge. Wider than And including. Nos. 13 to 19 No. 20 Nos. 21 to 23.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 12 b.  y priva  ib.  m— ib.  sheets, er 99% p  be ove  50 be o  6-1  144  9 7                                                                | 149, te bran 149,  | 7 % 6 49 8 51 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Nos. 17 to 16  Nos. 17 to 21  Nos. 22 to 24  Nos. 25 to 26  Nos. 25 to 26  Nos. 25 to 26  Nos. 25 to 26  Nos. 27  Nos. 27  Nos. 29  Nos. 25  Nos. 27  Nos. 29  Nos. 20  Nos. 2   | Nos Nos  Standar ordered. Feb. 6.  Stubs' W. G.  4-II 12 13 14 15 15 15 15 15 15 15 15 15 15 15 15 15                                                                                           | Base 1 13 1 13 1 1 1 1 1 1 1 1 1 1 1 1 1 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | nie ays                                                                                                                                                          | 9 am                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 10 10 16 16 16 16 16 16 16 16 16 16 16 16 16                                                                                                                                                                                                                                                                                                                                                              | 10<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>10<br>1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 11: 25: 14: 14: 14: 14: 14: 14: 14: 14: 14: 14                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | m ad 6 m ad 00 m ad derwise meter. 23/4 = 25/25/25/25/25/25/25/25/25/25/25/25/25/2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 1v.<br>1v.<br>24<br>24<br>24<br>24<br>24<br>27<br>29<br>31<br>36<br>36<br>37<br>47<br>45                                                                                                  | In Line! Pipe. Block Tis Pipe. Block Tis Pipe. Solder Old Lead in exchange, 3% \$\psi \psi \psi \psi \psi \psi \psi \psi                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 12 b.  y priva  ib.  sheets, er 99% g  be ove  6-1  144  190.                                                                                | 106                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 7 % 6 49 8 51 1.54                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Nos. 17 to 31  Nos. 17 to 31  Nos. 22 to 24  Nos. 25 to 26  Nos. 25 to 26  Nos. 25 to 26  Nos. 27  Nos. 26  Nos. 27  Nos. 27  Nos. 27  Nos. 27  Nos. 28  Nos. 29  Nos. 29  Nos. 29  Nos. 29  Nos. 29  Nos. 20  Nos   | Nos                                                                                                                                                                                             | Base 13 13 13 14 16 15 15 15 15 15 15 15 15 15 15 15 15 15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | nie rays                                                                                                                                                         | 9 am in                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 10 10 (e)                                                                                                                                                                                                                                                                                                                                                             | 19<br>2)40<br>5 T<br>19<br>2)40<br>5 T<br>19<br>2)40<br>5 T<br>19<br>33 31<br>33 31<br>33 31<br>33 31<br>33 31<br>33 31<br>33 31<br>33 31<br>33 31<br>34 40<br>44 42<br>44 43<br>44 43<br>44 44 43<br>44 45<br>46 49 47<br>47 47<br>48 49 47<br>48 49 47<br>49 47<br>40 | 11: 9: 14: 14: 14: 14: 14: 14: 14: 14: 14: 14                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | m ad 6 m ad 00 m ad derwise meter. 23/4 = 25/25/25/25/25/25/25/25/25/25/25/25/25/2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 1v.<br>1v.<br>24<br>24<br>24<br>24<br>24<br>27<br>29<br>31<br>36<br>36<br>37<br>47<br>45                                                                                                  | In Line! Pipe. Block Tis Pipe. Block Tis Pipe. Solder Old Lead in exchange, 35% \$\pi\$ 2.4 & 16, guaranteed No. 1 Prices of Solder indicated b according to composition.  Antimor Duty, 36 \$\pi\$ Cookson. Haltett's U. 8.  Aluminum Duty: Crude, 86 \$\pi\$ b. Plates, 136 \$\pi\$ b. No. 1 Aluminum (guaranteed or for remelting: Small lots. 100-\$\pi\$ lots No. 2 Aluminum (guaranteed to ingots for remelting: Small lots. 100-\$\pi\$ lots Aluminum Sheet, B, & S. gauge. Wider than And including. No. 20 No. 24 No. 24 No. 25 No. 25 No. 25 No. 26 No. 27                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | y priva  y priva  y priva  y priva  b.  m—  Sheets, er 99% p  be ove  50 % o  6-1  144  \$ 9 .                                               | # 5 1  Bars an are), in a ser more, in 14-in 15-in 24-in 16-in 16- | 7 % 6 % 6 % 6 % 6 % 6 % 6 % 6 % 6 % 6 %                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Nos. 17 to 16.  Nos. 17 to 21.  Nos. 27 to 21.  Nos. 25 to 24.  Nos. 25 to 26.  Nos. 25 to 26.  Nos. 27.  No. 27.  No. 29.  No. 29.  No. 30.  Foreign Steel from Store—  Best Cast.  Foreign Steel from Store—  Balter, 1st quality.  Foreign Steel flat guality.  Foreign Steel flat quality.  Fore   | Nos                                                                                                                                                                                             | Base 13 13 13 14 15 15 15 15 15 15 15 15 15 15 15 15 15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 1 1 21 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2                                                                                                                           | 9 an 11 11 11 11 11 11 11 11 11 11 11 11 11                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 10 10 16 16 18 18 18 18 18 18 18 18 18 18 18 18 18                                                                                                                                                                                                                                                                                                                                                        | 19 234 9 T 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 11: 29: ubee inless tailed tai | 10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | m ao 6 inc 28 \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 1v. 1v. 1v. 1v. 24 24 24 24 24 25 25 27 27 27 27 27 27 27 27 27 27 27 27 27                                                                                                               | In Line! Pipe. Block Tis Pipe. Block Tis Pipe. Block Tis Pipe. Solder  1&& 1/6, guaranteed  No. 1 Prices of Solder indicated b according to composition.  Antimor Duty, 3/6 W  Cookson. Haltett's. U. 8.  Aluminum Duty: Crude, 8/6 W b. Plates, 13/6 W b. No. 1 Aluminum (guaranteed or for remelting: Small lots. 100-B lots No. 2 Aluminum (guaranteed to ingots for remelting: Small lots. 100-B lots Aluminum (guaranteed to ingots for remelting: Small lots. 100-B lots No. 2 Aluminum (guaranteed to ingots for remelting: Small lots. 100-B lots No. 2 Saluminum Nos. 13 to 19 No. 20 Nos. 21 to 23 No. 24 No. 25 No. 25 No. 26 No. 27 No. 28 No. 28 No. 29 No. 27 No. 28 No. 29 No. 20 N                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | y priva  y priva  ib.  m—  Sheets, er 99% p  be ove  50 be o                                                                                 | # 5 1  Bars an are), in are 10 % pr 10 | 7 % 6 49 8 51 1 54 4 90 47 64 4 59 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7 64 0 69 7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Nos. 17 to 16.  Nos. 17 to 21.  Nos. 27 to 21.  Nos. 25 to 24.  Nos. 25 to 26.  Nos. 25 to 26.  Nos. 27.  No. 27.  No. 29.  No. 29.  No. 30.  Foreign Steel from Store—  Best Cast.  Foreign Steel from Store—  Best Cast.  Farta Cast.  Foreign Steel from Store—  Best Cast.  Foreign Steel from Store—  Bulletr. 1st quality  Foreign Steel from Store—  Bulletr. 1st quality  Foreign Steel from Store—  Foreign Steel from Store—  Banca Steel, 1st quality  Foreign Steel from Store—  Foreign Steel from Store  Foreign Steel from Store  Foreign Steel from Store  For   | Nos                                                                                                                                                                                             | Base 13 13 13 14 15 15 15 15 15 15 15 15 15 15 15 15 15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 1 1 21 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2                                                                                                                           | 9 an 11 11 11 11 11 11 11 11 11 11 11 11 11                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 10 10 16 16 18 18 18 18 18 18 18 18 18 18 18 18 18                                                                                                                                                                                                                                                                                                                                                        | 19 234 9 T 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 11: 29: ubee inless tailed tai | 10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | m ao 6 inc 28 \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 1v. 1v. 1v. 1v. 24 24 24 24 24 25 25 27 27 27 27 27 27 27 27 27 27 27 27 27                                                                                                               | In Line! Pipe. Block Tis Pipe. Block Tis Pipe. Block Tis Pipe. Solder Old Lead in exchange, 3% \$\psi\$ \$\psi     | y priva  y priva  y priva  y priva  ny— lb.  sheets, or 99% p  be ove                                                                        | ## 5 1 14 14 14 14 15 14 16 14 16 14 16 16 16 16 16 16 16 16 16 16 16 16 16                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 205 off 205 of                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| No. 10 to 10.  No. 17 to 21  No. 22 to 24  No. 25 to 28  No. 25 to 28  No. 27  No. 29  No. 29  No. 29  No. 29  Foreign Steel from Store—  Best Cast.  Extra Cast.  Swaged, Cast.  Best Double Shear.  Bilster, 1st quality.  2d quality.  2d quality.  2d quality.  3h 16  2d quality.  3h 16  2d quality.  4h 18  Sheet Cost. Best.  2d quality.  3h 18  4h 18  4h 18  4h 18  4h 18  4h 18  5h 18    | Nos                                                                                                                                                                                             | Base 13 13 13 14 15 15 15 15 15 15 15 15 15 15 15 15 15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 1 1 21 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2                                                                                                                           | 9 an 11 11 11 11 11 11 11 11 11 11 11 11 11                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 10 10 16 16 18 18 18 18 18 18 18 18 18 18 18 18 18                                                                                                                                                                                                                                                                                                                                                        | 19 234 9 T 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 11: 29: ubee inless tailed tai | 10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | m ao 6 inc 28 \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 1v. 1v. 1v. 1v. 24 24 24 24 24 25 25 27 27 27 27 27 27 27 27 27 27 27 27 27                                                                                                               | In Line! Pipe. Block Tis Pipe. Block Tis Pipe. Block Tis Pipe. Solder Old Lead in exchange, 3% \$\psi\$ \$\psi     | y priva  y priva  y priva  y priva  ny— lb.  sheets, or 99% p  be ove                                                                        | ## 5 1 14 14 14 14 15 14 16 14 16 14 16 16 16 16 16 16 16 16 16 16 16 16 16                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 205 off 205 of                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Nos. 17 to 31  Nos. 17 to 31  Nos. 22 to 34  Nos. 25 to 34  Nos. 25 to 34  Nos. 25 to 26  Nos. 27  No. 28  No. 27  No. 28  No. 27  No. 29  No. 30  No.   | Nos                                                                                                                                                                                             | Base 13 13 13 14 15 15 15 15 15 15 15 15 15 15 15 15 15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 1 1 21 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2                                                                                                                           | 9 an 11 11 11 11 11 11 11 11 11 11 11 11 11                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 10 10 16 16 18 18 18 18 18 18 18 18 18 18 18 18 18                                                                                                                                                                                                                                                                                                                                                        | 19 234 9 T 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24 19 24                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 11: 29: ubee inless tailed tai | 10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | m ao 6 inc 28 \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 1v. 1v. 1v. 1v. 24 24 24 24 24 25 25 27 27 27 27 27 27 27 27 27 27 27 27 27                                                                                                               | In Line! Pipe. Block Tis Pipe. Block Tis Pipe. Block Tis Pipe. Solder Old Lead in exchange, 3% \$\psi\$ \$\psi     | y priva  y priva  y priva  y priva  ny— lb.  sheets, or 99% p  be ove                                                                        | ## 5 1 14 14 14 14 15 14 16 14 16 14 16 16 16 16 16 16 16 16 16 16 16 16 16                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 205 off 205 of                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Nos. 17 to 21  Nos. 22 to 24  Nos. 25 to 25  No. 27  No. 28  No. 27  No. 29  No. 30   | Nos                                                                                                                                                                                             | Base 13 13 14 15 16 16 17 17 17 17 17 17 17 17 17 17 17 17 17                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | nie rays                                                                                                                                                         | 9 an 11 11 12 1 13 13 14 14 14 14 14 14 14 14 14 14 14 14 14                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 10 (6) (6) (6) (7) (8) (8) (8) (8) (8) (8) (8) (8) (8) (8                                                                                                                                                                                                                                                                                                                                                 | 10 254 10 10 254 10 10 254 10 10 10 10 10 10 10 10 10 10 10 10 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 11: 9: ube anless italde   14: 14: 14: 14: 14: 14: 14: 14: 14: 14:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 14                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | m ad                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 1v. 1v. 1v. 1v. 1v. 1see 1see 1see 1see 1see 1see 1see 1se                                                                                                                                | In Line! Pipe. Block Tis Pipe. Block Tis Pipe. Solder Old Lead in exchange, 3756 P  2 & 36, guaranteed No. 1. Prices of Solder indicated b according to composition.  Antimor Duty, 36 P  Duty, 36 P  No. 1 Aluminum (guaranteed or for remelting: Small lots. 100-B lots. No. 2 Aluminum (guaranteed to ingots for remelting: Small lots. 100-B lots. Aluminum (guaranteed to ingots for remelting: Small lots. 100-B lots. No. 2 Aluminum (guaranteed to ingots for remelting: Small lots. 100-B lots. No. 2 S S S S S S S S S S S S S S S S S S                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 12 b.  y priva  ib.  sheets, er 99% p  be ove  14.  4 1.  40.  15.  17.  18.  20.  21.                                                       | ## 5 1 14 14 14 14 15 14 16 14 16 14 16 16 16 16 16 16 16 16 16 16 16 16 16                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 205 of 20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Nos. 10 to 16.  Nos. 21 to 21  Nos. 22 to 24  Nos. 25 to 28  Nos. 27  Nos. 29  Nos. 20    | Nos                                                                                                                                                                                             | Base 13 13 14 15 16 16 17 17 17 17 17 17 17 17 17 17 17 17 17                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | nie rays                                                                                                                                                         | 9 an 11 11 11 11 11 11 11 11 11 11 11 11 11                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 10 (6) (6) (6) (7) (8) (8) (8) (8) (8) (8) (8) (8) (8) (8                                                                                                                                                                                                                                                                                                                                                 | 10 254 10 10 254 10 10 254 10 10 10 10 10 10 10 10 10 10 10 10 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 11: 9: ube anless italde   74: 34: 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 14                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | ## and ## and on ## and | 1v.<br>1v.<br>1v.<br>24<br>24<br>24<br>24<br>24<br>24<br>25<br>27<br>29<br>31<br>36<br>37<br>30<br>31<br>42<br>43<br>45<br>31<br>45<br>45<br>45<br>45<br>45<br>45<br>45<br>45<br>45<br>45 | In Line! Pipe. Block Tis Pipe. Block Tis Pipe. Slock the Sic t Lead. Old Lead in exchange, 3% \$\psi\$ \$\psi\$ Lead. Old Lead in exchange, 3% \$\psi\$ \$\psi\$ \$\psi\$ the Lead.  Solder  No. 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 12 b.  y priva  ib.  m— ib.  sheets, er 99% p be ove  50 be ove  144  90.  15.  17.  18.  18.  19.  20.  21.  21.                            | # 5 1  Bars an are), in a a a a a a a a a a a a a a a a a a                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 366 1956 of 205                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Nos. 17 to 31  Nos. 17 to 31  Nos. 22 to 34  Nos. 25 to 34  Nos. 25 to 24  Nos. 25 to 25  No. 27  No. 28  No. 27  No. 29  No. 30  No.    | Nos                                                                                                                                                                                             | Base 13 13 14 15 16 16 17 17 17 17 17 17 17 17 17 17 17 17 17                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | nie                                                                                                                                                              | 9 an 11 11 11 11 11 11 11 11 11 11 11 11 11                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 10 (6) (6) (7) (8) (8) (8) (8) (8) (8) (8) (8) (8) (8                                                                                                                                                                                                                                                                                                                                                     | 10 25 4 4 1 1 1 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 11: 9: ube anless italde 4: 3: 3: 3: 3: 3: 3: 3: 3: 3: 3: 3: 3: 3:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 14 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | m ad 8 m ad 0 m ad aerwi neter.  25 25 25 25 25 25 25 25 25 25 25 25 25 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 1v.<br>1v.<br>1v.<br>24<br>24<br>24<br>24<br>24<br>24<br>24<br>25<br>27<br>27<br>29<br>42<br>45<br>27<br>45<br>45<br>45<br>45<br>45<br>45<br>45<br>45<br>45<br>45                         | In Line! Pipe. Block Tis Pipe. Block Tis Pipe. Block Tis Pipe. Solder  1.4 & 14. guaranteed  No. 1 Prices of Solder indicated b according to composition.  Antimor Duty, 34 w  Cookson. Haliett's.  U. 8.  Aluminum Duty: Crude, 84 w b. Plates, 134 w b. No. 1 Aluminum (guaranteed or for remelting: Small lots. 100-w lots.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 12 b.  y priva  y priva  ib.  m— Sheets, er 99% p  be ove  50 be ove  14                                                                     | # 5 1  Bars an are), in a re more, n. 14-11 in, 24-11 in, 24-14 in | ### 114 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Nos. 17 to 21                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Nos  Nos  Nos  Standar ordered. Feb. 6.  Stubs' W. G.  4-11 15 15 17 18 19 19 19 10 11 14 15 17 18 19 19 19 10 10 11 14 15 17 18 19 19 19 10 10 10 10 10 10 10 10 10 10 10 10 10                | Brons                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | nie aya                                                                                                                                                          | 9 an 11 12 1 13 14 14 14 14 14 14 14 14 14 14 14 14 14                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 10 (4 4 5 5 6 6 4 5 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7                                                                                                                                                                                                                                                                                                                                                   | 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 254                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 11: 9: ube aniloss italde                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 76 1 1 2 3 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | # ad ad b # ad ad or wi neter.  ### ### ### ### ### ### ### ### ### #                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 1v.<br>1v.<br>1v.<br>24.<br>24.<br>24.<br>24.<br>24.<br>24.<br>24.<br>25.<br>27.<br>29.<br>42.<br>45.<br>36.<br>37.<br>45.<br>45.<br>45.<br>45.<br>45.<br>45.<br>45.<br>45                | In Line! Pipe. Block Tis Pipe. Block Tis Pipe. Sic t Lea's Old Lead in exchange, 3% \$\psi\$ \$\psi\$ Lake \$1\ppi\$, guaranteed No. 1 Prices of Solder indicated b according to composition.  Antimor Duty, \$4\pi\$ \$\psi\$  Cookson. Haltett's U. 8.  Aluminum Duty: Crude, \$4\pi\$ \$\psi\$. Plates, 13\pi\$ \$\pi\$. No. 1 Aluminum (guaranteed or for remelting: Small lots. 100-\$\pi\$ lots. No. 2 Aluminum (guaranteed to ingots for remelting: Small lots. 100-\$\pi\$ lots. Aluminum Sheet, B. & S. gauge. Wider than. And including. Nos. 13 to 19. No. 20. Nos. 21 to 23. No. 24. No. 25. No. 26. No. 27. No. 28. No. 29. No. 30. NoteLots of less than 50 \$\pi\$: Aluminum Wire, B. & S. gauge Largerthan No. 9 \$\pi\$ \$\pi\$ 40 \$\pi\$ \$\pi\$ No. 90. No. 10 \pi\$ \$\pi\$ 40 \$\pi\$ \$\pi\$ No. 10 \pi\$ \$\pi\$ 40 \$\pi\$ \$\pi\$ No. 11 \pi\$ \$\pi\$ \$\p                                                                                                           | 12 b.  y priva  ib.  m—  Sheets, er 993 p  be ove  50 be ove  14 9 1  30  17 18  18 20  21  als.  Paid in                                    | # 5 1  Bars an are), in a ser more, in 14-11 in 24-11 in 24-14 in  | ### 114   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Nos. 17 to 21                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Nos  Nos  Nos  Standar ordered. Feb. 6.  Stubs' W. G.  4-11 19 13 14 15 15 17 18 19 10 11 11 12 13 14 15 15 17 18 19 10 10 11 11 12 13 14 15 15 17 18 19 10 10 11 11 11 11 11 11 11 11 11 11 11 | Brons                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | nie aya                                                                                                                                                          | 9 an 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 10 (4 4 5 5 6 6 4 5 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7                                                                                                                                                                                                                                                                                                                                                   | 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 2546 10 254                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 11: 9: ube unless italde   74: 34: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: 99: 30: | 76 1 1 2 3 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | # ad ad b # ad ad or wi neter.  ### ### ### ### ### ### ### ### ### #                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 1v.<br>1v.<br>1v.<br>24.<br>24.<br>24.<br>24.<br>24.<br>24.<br>24.<br>25.<br>27.<br>29.<br>42.<br>45.<br>36.<br>37.<br>45.<br>45.<br>45.<br>45.<br>45.<br>45.<br>45.<br>45                | In Line! Pipe. Block Tis Pipe. Block Tis Pipe. Sic t Lea's Old Lead in exchange, 3% \$\psi\$ \$\psi\$ Lake \$1\ppi\$, guaranteed No. 1 Prices of Solder indicated b according to composition.  Antimor Duty, \$4\pi\$ \$\psi\$  Cookson. Haltett's U. 8.  Aluminum Duty: Crude, \$4\pi\$ \$\psi\$. Plates, 13\pi\$ \$\pi\$. No. 1 Aluminum (guaranteed or for remelting: Small lots. 100-\$\pi\$ lots. No. 2 Aluminum (guaranteed to ingots for remelting: Small lots. 100-\$\pi\$ lots. Aluminum Sheet, B. & S. gauge. Wider than. And including. Nos. 13 to 19. No. 20. Nos. 21 to 23. No. 24. No. 25. No. 26. No. 27. No. 28. No. 29. No. 30. NoteLots of less than 50 \$\pi\$: Aluminum Wire, B. & S. gauge Largerthan No. 9 \$\pi\$ \$\pi\$ 40 \$\pi\$ \$\pi\$ No. 90. No. 10 \pi\$ \$\pi\$ 40 \$\pi\$ \$\pi\$ No. 10 \pi\$ \$\pi\$ 40 \$\pi\$ \$\pi\$ No. 11 \pi\$ \$\pi\$ \$\p                                                                                                           | 12 b.  y priva  ib.  m—  Sheets, er 993 p  be ove  50 be ove  14 9 1  30  17 18  18 20  21  als.  Paid in                                    | # 5 1  Bars an are), in a ser more, in 14-11 in 24-11 in 24-14 in  | ### 114   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 104   ### 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Nos. 10 to 10.  Nos. 10 to 21.  Nos. 12 to 24.  Nos. 25 to 24.  Nos. 25 to 26.  Nos. 25 to 26.  Nos. 25 to 26.  Nos. 27.  Nos. 28.  Nos. 28.  Nos. 29.  Nos. 29.  Nos. 29.  Nos. 29.  Nos. 29.  Nos. 29.  Nos. 20.  Sé in. 1¢ \$\frac{1}{2}\$ b ligher.  Foreign Steel from Store—  Best Cast.  Extra | Nos  Nos  Standar ordered. Feb. 6.  Stuba' W. G.                                                                                                                                                | Brown Brown To No. 1809.  Brons Brown Brown Brown Brown To No. 1809.  Brown Brown Brown To No. 1809.  Brown Brown To No. 1809.   nie rays                                                                                                                                                         | 9 an 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 10 (4 4 4 5 5 6 6 5 7 1 5 6 5 7 7 7 3 5 5 6 7 7 7 3 5 6 7 7 7 3 5 6 7 7 7 3 5 6 7 7 7 3 5 6 7 7 7 3 5 6 7 7 7 3 5 6 7 7 7 3 5 6 7 7 7 7 3 5 6 7 7 7 7 3 5 6 7 7 7 7 3 5 6 7 7 7 7 3 5 6 7 7 7 7 3 5 6 7 7 7 7 3 5 6 7 7 7 7 3 5 6 7 7 7 7 3 5 6 7 7 7 7 3 5 6 7 7 7 7 3 5 6 7 7 7 7 3 5 6 7 7 7 7 3 5 6 7 7 7 7 3 5 6 7 7 7 7 7 3 5 6 7 7 7 7 7 3 5 6 7 7 7 7 7 3 5 6 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 | 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 11: 9: ube anless talde   74: 34: 30: 90: 30: 90: 30: 90: 30: 90: 30: 30: 30: 30: 30: 30: 30: 30: 30: 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 74 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | ## add ## | 1v.   1se   24   24   25   27   27   27   27   27   27   27                                                                                                                               | In Line! Pipe. Block Tis Pipe. Block Tis Pipe. Solder Old Lead in exchange, 3% \$\psi\$ | 12 b.  y priva  y priva  y priva  19 -  Sheets, or 99% p  be ove  50 be ove  -  14 -  18 -  15 -  17 -  18 -  19 -  20 -  21 -  Als. Paid in | ## 5 1 144 14 14 14 14 14 14 14 14 14 14 14                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | ### 114 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Nos. 10 to 10.  Nos. 10 to 21.  Nos. 12 to 24.  Nos. 25 to 24.  Nos. 25 to 26.  Nos. 25 to 26.  Nos. 25 to 26.  Nos. 27.  Nos. 28.  Nos. 28.  Nos. 29.  Nos. 29.  Nos. 29.  Nos. 29.  Nos. 29.  Nos. 29.  Nos. 20.  Sé in. 1¢ \$\frac{1}{2}\$ b ligher.  Foreign Steel from Store—  Best Cast.  Extra | Nos  Nos  Nos  Standar ordered. Feb. 6.  Stubs' W. G.  4-11 15 15 17 18 19 19 10 11 14 15 17 18 19 19 10 10 11 11 15 17 18 19 19 10 10 10 11 11 11 11 11 11 11 11 11 11                         | Base 13 13 13 13 14 15 16 16 16 16 16 16 16 16 16 16 16 16 16                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | nie ays                                                                                                                                                          | 9 an 11 12 1 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 1 2 1 1 1 2 1 1 1 2 1 1 1 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1                                                                                                                                                                                                                                   | 10 (4 ) (4 ) (4 ) (4 ) (6 ) (6 ) (7 ) (7 ) (8 ) (7 ) (7 ) (8 ) (7 ) (7                                                                                                                                                                                                                                                                                                                                    | 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 11: 9: ube anless talde   74: 34: 30: 90: 30: 90: 30: 90: 30: 90: 30: 30: 30: 30: 30: 30: 30: 30: 30: 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 74 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | ## add ## | 1v.   1se   24   24   25   27   27   27   27   27   27   27                                                                                                                               | In Line! Pipe. Block Tis Pipe. Block Tis Pipe. Solder Old Lead in exchange, 3% \$\psi\$ | 12 b.  y priva  y priva  y priva  19 -  Sheets, or 99% p  be ove  50 be ove  -  14 -  18 -  15 -  17 -  18 -  19 -  20 -  21 -  Als. Paid in | ## 5 1 144 14 14 14 14 14 14 14 14 14 14 14                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | ### 114 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Nos. 10 to 10.  Nos. 10 to 21.  Nos. 12 to 24.  Nos. 25 to 26.  Nos. 27.  No. 29.  No. 29.  No. 29.  No. 30.  Solin. 1¢ \$\frac{1}{2}\$ b higher.  Foreign Steel from Store—  Best Cast.  Extra Cast.  Extra Cast.  Extra Cast.  Best Double Shear.  Bilister. 1st quality.  German Steel, Best.  2d quality.  3d quality.  3d quality.  3d quality.  3d quality.  3d quality.  4b 16.  2d quality.  4c 2d quality.  4c 3d quali | Nos                                                                                                                                                                                             | Brons Brow and Crown and Carolada High And Carol | nie rays                                                                                                                                                         | 9 an 11 12 1 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 1 2 1 1 1 2 1 1 1 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 10 (4 4 5 6 6 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1                                                                                                                                                                                                                                                                                                                                                           | 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 254 6 10 255 6 10 254 6 10 254 6 10 255 6 10 254 6 10 255 6 10 254 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10 255 6 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 11: 9: ube anless talde   74: 34: 30: 90: 30: 90: 30: 90: 30: 90: 30: 30: 30: 30: 30: 30: 30: 30: 30: 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 74 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | ## add ## | 1v.   1se   24   24   25   27   27   27   27   27   27   27                                                                                                                               | In Line! Pipe. Block Tis Pipe. Block Tis Pipe. Solder Old Lead in exchange, 3% \$\psi\$ | 12 b.  y priva  y priva  y priva  19 -  Sheets, or 99% p  be ove  50 be ove  -  14 -  18 -  15 -  17 -  18 -  19 -  20 -  21 -  Als. Paid in | ## 5 1 144 14 14 14 14 14 14 14 14 14 14 14                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | ### 114 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Nos. 10 to 16.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Nos                                                                                                                                                                                             | Brons Brow and Crown and Carolada High And Carol | nie rays                                                                                                                                                         | 9 an 11 12 1 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 2 1 1 1 2 1 1 1 2 1 1 1 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 10 (4 4 5 6 6 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1                                                                                                                                                                                                                                                                                                                                                           | 10 25 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 11: 9: ube anless talde   74: 34: 30: 90: 30: 90: 30: 90: 30: 90: 30: 30: 30: 30: 30: 30: 30: 30: 30: 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 74 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | ## add ## | 1v.   1se   24   24   25   27   27   27   27   27   27   27                                                                                                                               | In Line! Pipe. Block Tis Pipe. Block Tis Pipe. Sic Lead. Old Lead in exchange, 3% \$\psi\$ \$\psi\$ to Lead.  Solder  L& 26, guaranteed  No. 1  Prices of Solder indicated be according to composition.  Antimor  Duty, 36 \$\psi\$  Cookson.  Aluminum  Duty: Crude, 8\$\psi\$ \$\psi\$. Plates, 136 \$\psi\$ \$\psi\$.  No. 1 Aluminum (guaranteed or for remelting: Small loss. 100-\$\psi\$ lots.  No. 2 Aluminum (guaranteed to ingots for remelting: Small lots. 100-\$\psi\$ lots.  No. 2 Aluminum (guaranteed to ingots for remelting: Small lots. 100-\$\psi\$ lots.  No. 3 \$\psi\$ lots.  No. 100-\$\psi\$ lots.  No. 24.  No. 25.  No. 26.  No. 27.  No. 28.  No. 28.  No. 29.  No. 30.  No. 29.  No. 10.  No. 11.  No. 11.  No. 11.  No. 11.  No. 12.  No. 14.  No. 15.  No. 15.  No. 16.  No. 16.  No. 17.  No. 18.  No. 19.  No. 19.  No. 10.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 12 b.  y priva  y priva  y priva  19 -  Sheets, or 99% p  be ove  50 be ove  -  14 -  18 -  15 -  17 -  18 -  19 -  20 -  21 -  Als. Paid in | ## 5 1 144 14 14 14 14 14 14 14 14 14 14 14                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | ### 114 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 104 ### 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

#### MADE IN VARIOUS SIZES



CARY MFG. CO.,

19 & 21 Roosevelt St. NEW YORK.

LARGEST DEALERS IN

# OLD RUBBER WORLD

THEODORE HOFELLER & CO.,

BUFFALO, N. Y.

We buy OLD METALS, OLD RUBBER PACKING, OLD HOSE, or any grade of SCRAP RUBBER.



The Gem Oiler costs as little as the worse oilers but are the best oilers made.



GEM MANUFACTURING CO.,

200, 202 Wood St., Pittsburg, Pa.

#### Hardware Store Business Methods.

A book describing advanced and effective business methods, and full of practical suggestions, information and facts for Merchants, Buyers, Salesmen, Gerks and Accountants.

A practical guide for the hardwareman in matters of business, and a valuable aid to the clerk in qualifying for a successful career.

200 Pages, Octavo, Cloth.

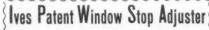
康

ONE DOLLAR, POSTPAID.

DAVID WILLIAMS COMPANY, Publishers,

232-238 William Street, New York,







and 30-page Catalogue of Window Hardware Specialties mailed free.

H. B. Ives & Co.







153,052 lbs. of Iron and Steel have been made into Lyon Egg Beaters and Cream Whips. Send for New Frice-List Circular. Velson Lyon, Sole Manuf., 52 Green St., Albany, N. Y.



For holding window, whitewash, scrub and all kinds of brushes in any position desired. Most useful article ever invented. Strong and durable. Furnished with elegant window brush and handle if desired. Price on application. Manufactured by

THE BICKNELL HARDWARE CO., JANESVILLE, WIS.

# NICHOLSON The File That Does The Work.



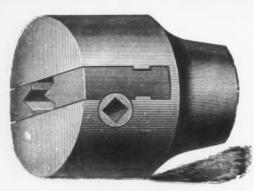
Sold in Every Large City in the World.

Used by 24 Foreign Covernments.



NICHOLSON FILE CO., - Providence, R. I., U. S. A.
LARGEST MAKERS IN THE WORLD.

## DRILL CHUCKS



THREE SIZES.

No. 0 takes any drill from 0 to 1-2 inch inclusive.

0 " 3-4 No. 1

No. 2 0 " 1

They are the strongest and most durable made. Drill absolutely in the center. No twisting or bending necessary if drill is straight. Can be fitted to hollow spindle lathes for working long rods.

SEND FOR CIRCULAR.

R. H. BROWN & CO.

New Haven, Conn.

You take no risk on the Quality We make only the best!



SAND PAPERS

Flint Paper **Carnet Paper Emery Paper** Reams and Rolls **Emery Cloth** 

WAIR FELTING for covering Boilers, Steam and Water Pipe, and lining Refrigerators.

#### BAEDER, ADAMSON & CO.

730 MARKET STREET, PHILADELPHIA.

- 67 BEEKMAN STREET, NEW YORK.
- 143 MILK STREET, BOSTON. 162 LAKE STREET, CHICAGO.



BRACE

Still holds its grip as firmly with both dealer and mechanic as it does on the shank of the bit, and after having been on the market from thirty to forty years is all the time growing more and more popular.

It is, we think, generally conceded to be the leader in quality, style

and beauty of finish Made with and without ratchets and in various grades to suit the demand. Also with Drill Attachments.

Every dealer should have one of our catalogues No 26 describing our full line. It will be mailed to you if asked for.

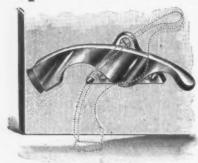
\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

MILLERS FALLS CO.,

No. 28 Warren St., New York, N. Y., and Millers Falls, Mass.

しんかく るんわん かんりんりんりんりん うんうんうんうん うんりゅう うんうんうん

# Empire Door Holder.



Operated by a light pressure of the toe. No bending over. The Rubber Tip and Spring Action make it particularly desirable for use on carpet, polished wood or tiled floor.

MANUFACTURED BY

ROCHESTER, N. Y., U. S. A.

OTHER TOOLS ARE VERY GOOD TOOLS, BUT-

YANKEE" TOOLS ARE BETTER.



Single Spiral-Ratchet Screw Driver No. 20.

Reciprocating Drill No. 50.

Sold by Leading Jobbers. Send for "YANKEE" Tool Book No. 2, Just Issued.

NORTH BROS. MFG. CO., -PHILADELPHIA, PA.

New York Agents, JOHN H. GRAHAM & CO., 113 Chambers St.

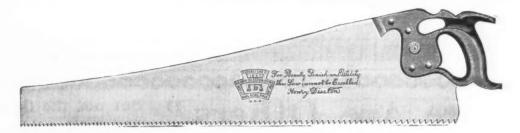


CALDWELL MFG. CO., MONCE'S NOVELTY GLASS CUTTERS. INTERCHANGEABLE LOCK STENCILS. No. 1 Cutter, born 1871, and has been worthy of extensive imitation, that is why I keep it before you.

We make others

S. G. MONCE, UNIONVILLE, CONN.

# DISSTON'S SKEWBACK HAND SAWS.



The Design and Construction Throughout was

# Originated and Patented

BY THE LATE

# HENRY DISSTON,

June 23d, 1874, and Dec. 8th 1874.

All Saws Made After This Pattern **ARE COPIES**of the Invention of HENRY DISSTON.

# DISSTON SAWS

# Imitated But Not Duplicated,

Either in Material, Workmanship or Finish.

# HENRY DISSTON & SONS,

Keystone Saw, Tool, Steel and File Works, PHILADELPHIA, PENNA.

# Segment Ground Cross-Cuts.

ONE OF OUR MANY BRANDS, THIS, THE "REX" IS

14 gauge on tooth edge, 16 on ends on back and 19 gauge at center on back. Furnished in silver steel if desired. The segment ground feature is what makes "The Atkins" so popular. Write

E. C. ATKINS & CO. (Incor'p'd), Indianapolis, Ind.

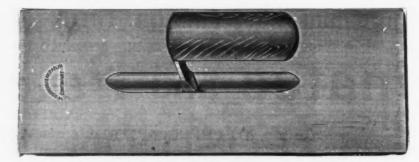
The Leading Saw Makers in America.

BRANCHES: Memphis, Tenn.; Minneapolis, Minn.; Chattanooga, Tenn.

MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MANUAL MA

There Are Others,"

But not the Genuine, ALL Imitations.

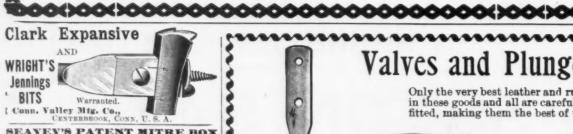


THE ONLY ORIGINAL

WOODROUGH & McPARLIN (CINCINNATI) PLASTERING TROWEL

THE NATIONAL SAW CO.,

GENERAL OFFICE: NEWARK, N. J.



SEAVEY'S PATENT MITRE BOX Lint. 830.00 40

THOMSON BROS. & CO., - - Lowell, Mass.
New York Office:

- 296 Broadway

ENSIGN, BICKFORD & CO., Simsbury, Connecticut, U. S. A. \*\*\*\*\*\*\*\*\*\*\*\*\*





The recognized standard in the United States and Canada for over 60 years.

Send for 1809-1900 Catalogue.

WM T. WOOD & CO., Arlington, - Mass., U. S. A

NEW YORK AGENCY, Sickles & Nutting Co., 35 Barclay St.

# WOOD SCREWS.

FLAT

AND

ROUND

HEAD.



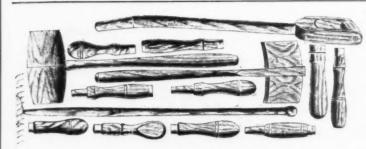
BRIGHT IRON AND BRASS.

MANUFACTURED BY

# READING HARDWARE CO.,

New York, 96 and 98 Reade Street. Philadelphia, 617 Market Street. Chicago, 105 Lake Street.

Reading, Pa.



# FARMING and SMALL TOOL HANDLES.

Send us your specifications and let us figure with you. We make handles for every purpose, also special shapes in wood. We apply the only genuine French Polish on high grade product.

THE PIQUA HANDLE & MFG. CO., PIQUA, O.



# PARIS EXPOSITION, 1900

Relative Awards

BRONZE MEDAL

SILVER MEDAL

GOLD MEDAL

GRAND PRIX Saws

The Simonds

Query

How many

"Grand" BRONZE MEDALS equal
One SILVER MEDAL?

How many

"Grand" SIVER MEDALS equal

One GOLD MEDAL?

How many "Grand"

GOLD MEDALS

equal the

**GRAND PRIX?** 

ANSWER: Any number of awards of an inferior class place the recipient in that class only. Self-made prefixes may please their maker, but they don't satisfy the American Public. The Simonds Mfg. Co. came out on top at the Paris Exposition, 1900, distancing all of its competitors of all nationalities—receiving

# The GRAND PRIX AND A GOLD MEDAL

SIMONDS MANUFACTURING CO.

TCHBURG, MASS.

CHICAGO, ILL.

NEW YORK CITY.

PORTLAND, ORE.

SEATTLE, WASH.

Simonds Mfg. Co., Ltd.

NEW ORLEANS, LA.

Simonds Saw Co,

SAN FRANCISCO, CAL.

The PONY or

#### Write tor Oirculars.

To Cut Grass from 6 to 10 inches high. 25-inch Knives.

This Mower can be used with a pony and a boy to guide the mower, or one man to pull and a boy to guide. Double train of gears, large reel with patent cylinder knives, rear cut train of gears on both sides, Enos patent bed knife, patent draft irons, shifting clutch, weight

#### Supplee Hardware Co., PHILADELPHIA.

EUREKA COMBINATION PLYFR.

Plyer-Cutter-Hammer. A great household tool. For wire fencing it has no equal. Cheap but good.



THE GLENDALE SHEAR. ear, well fluished and heavily holds the blades in proper positi cut. Send for Catalogue of full

Bridgeport, Conn., U.S.A., - - HARDWARE MANUFACTURERS.

"DUNWELL" GAS BURNER PLYER.

Two-Man Mower.





#### NICOL & CO.,

Special and Light

#### HARDWARE,

67 W. Washington St., Chicago, Ills., U. S. A



NEVER

SLIP

CATALOGUE.

W. C. LADD, Maker, Bristol, Conn. WRITE FOR PRICES.

#### PLAIN AND RATCHET BIT BRACES.



Winchendon, Mass Also Makers of other

Hardware Specialties. JOHN H. GRAHAM & Co., Agents, 113 Chambers St., N.Y.

Nut Machine All kinds Made to Augers Augers Augers Order. SNELL MFG. CO., Fiskdale Mass., U. S. A.

en Cutlery, Carpenters' Drawing Knives, Screw

# TOOL CHESTS

THE BEST LINE ON THE MARKET.

Place your orders now for the Holiday Trade.

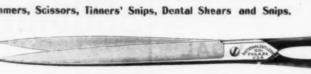
SPECIAL TOOL CHESTS MADE TO ORDER.

Also a complete line of Machinists'

## TOOL CHESTS.

C. E. JENNINGS & CO., 101 Reade St., N. Y.

Trimmers, Scissors, Tinners' Snips, Dental Shears and Snips,



WE SELL TO JOBBERS ONLY.

NATIONAL CUTLERY CO., 3d St. and Lehigh Avenue. PHILADELPHIA, PA., U. S. A.

NEW YORK OFFICE, 101 Reade Street.

#### CELEBRATED LANG SHEARS

Patented Bolt and Tension Spring Manufacturers of full line of Bent and Straigh High Grade, Steel Laid Shears. Send for Catalogue.

LANG CUTLERY WORKS,

Cedar Rapids, la.



C. J. KIMBALL COMPANY Bennington. N. H., U. S. A.

TRAD

H

TH

Send for Illustrated Catalogue of Full Line.



**GENUINE** 

CHISELS | CARVING TOOL8 COUCES | PLANE IRON8 &c.

"STAMPED WITH THE BUOK'S HEAD,"
THE STANDARD FOR 40 YEARS
Highest Awards & Prize Medals Highest Awards & Prize Medals
Sold by Hardware Dealers Everywhere
Each tool bears one of the marks
bere shown. send you price List.
BUCK BROTHERS TRADE



BUCK'S

HIGHEST AWARD PARIS EXPOSITION, 1880.



THE L. & I. J. WHITE CO.,

MANUFACTURERS

EDGE TOOLS. Coopers', Carpenters' and Ship Tools, Plane Irons,

BUFFALO, N. Y., U. S. A.

Cleavers, &c. Full Line Chisels. New York Office, 45 Centre St

75 YEARS.

ESTABLISHED 1825.

75 YEARS.



Tailors' Shears, Trimmers, Scissors, Tinners' Snips, etc.

R. HEINISCH'S SONS CO.,

New York Office, 90 Chambers Street.

NEWARK, N. J.

NOT CONNECTED WITH ANY SHEAR COMBINATION.

BUY THE BEST.

CHARLES BUCK TOOLS

UNEXCELLED. WORLD-WIDE REPUTATION.

Shank Chisels and Gouges. Socket Chisels and Gouges. Beveled Edge Chisels a specialty. Turning Chisels and Georges. Plane Irons, Double Irons, Belt Awis, Scratch Awis, Cold Chisels, Reamers, Screw Driver Bits, Nail Sets, Countersinks, Prick Punches, Coopers' Punches, Etc.

MADE AND WARRANTED BY

Charles Buck, Proprietor, Millbury Edge Tool Works,

MILLBURY, MASS., U. S. A.

Send for Catalogue.

1,000 Patent Security Snaps for \$5.00

Safest and most durable Snap made. (Patented May 15, 1900.) Send 2c. postage for sample.

SUNDRIES MFG. CO., - - South Bend, Inda. CATTARAUGUS POCKET KNIVES.

The value of a pocket knife is in the SATthat it gives the first day but EVERY DAY that you have it.



all our KNIVES TO GIVE SATISFACTION ALL THE TIME. WE SELL ONLY to the RETAIL TRADE. We CATTARAUGUS CUTLERY CO., Little Valley, N. Y. solicit your patronage.

THE CELEBRATED

#### RED SEAL SHEARS.

MANUFACTURED ONLY BY

THE ACME SHEAR CO.

BRIDGEPORT, CONN.

The "ORIGINAL JENNINGS" AUGERS and AUGER BITS.



Genuine have "Russell Jennings" stamped in full on the Round of each Rit

FOR SALE BY The Russell Jennings Mfg. Co., Deep River, Ct., U. S. A.



ESTABLISHED 1874.

HICH GRADE AUGER BITS. (BLACK TWIST.)

JOB T. PUCH, Philadelphia.

THE

## Ford Ship Augers.

SECOND TO NONE.

Prices Right.

THE FORD BIT CO., HOLYOKE, MASS.

American Tool Chest Company, NEW YORK. MANUFACTURERS OF

TOOL CHESTS

complete with tools, for Hardware, Toy Notion and Variety trades. Factory and Salesroom,

200 West Houston Street, near Varick. Also Machinists' Tool Chests, empty. Tool Cabinets and Work Benenes. Illustrated Catalogue and prices furn'shed on application.

GERMAN GIMLET DOUBLE CUT GIMLET SCREW DRIVER BELL HANGERS'

Send for Catalogue. NORTON MFG. CO. - Chester, Conn.

> THE SUPERIORITY OF Criffin's Improved **Pressed Steel** Shelf Bracket

IS UNQUESTIONED:

Attractive IN PRICE.

SOLD BY ALL LEADING JOBBERS. Write for prices.

THE GRIFFIN MFG. CO.. - Allegheny. Pa.



GEM NAIL CLIPPER

Cuts, Cleans and Files. It is a neat, well made, nickel plated article. Put up attractively and sold cheaply. Send for circu-lars and prices.

The H. C. Cook Co., Ansonia, Gonn., U. S. A.

# SILVER PLATE

12 DWT. PURE SILVER PER DOZEN.

Superior Finish, Hand Burnished.

#### NO BETTER MADE AT ANY PRICE.

Our reputation is back of these goods and we give them the strongest possible guaranty-no competition on this line.

Nothing gives such satisfaction as good Silver.

GOODELL SILVER IS GOOD SILVER.

GOODELL COMPANY, ANTRIM, N. H., U. S. A.

NEW YORK OFFICE, 10 WARREN STREET.

## Mugford's Half Tones,

Wood Cuts and Electrotypes.

"You See Them Bverywhere."

#### A. MUGFORD,

ENGRAVER and ELECTROTYPER HARTFORD, CONN.

New York Office, 120 Liberty Street.

## ...Jenkins... Iron and Tool Co..

HOWARD, PA., U. S. A.

> Weldless Steel

> > Rakes,

Solid Steel Hoes, Coal Mining Picks, Coke Scraper Heads, Tested Coil and Cable Chain,

Screw and Strap Hinges,

Iron and Steel Forgings, &c.

SURPLESS, DUNN & CO., 55 Warren St., New York.

# Cast Brass Butt Hinges

IN STOCK AND FOR SALE BY

W. & J. TIEBOUT.

No. 118 Chambers St., New York,

MANUFACTURERS OF

BRASS, GALVANIZED & SHIP CHANDLERY BARDWARE.

# GARLAND CHAIN CO.

Rankin Sta., Pa.

Successors to American Steel & Wire Co., Rivet and Pump Chain Depts.; H. P. Natl Co., Rivets, Cleveland: Washburn & Moen, Pump Chain, Worcester.

Rivets and Pump Chain.

WRITE US FOR PRICES.

SEND US YOUR ORDERS.



# Stove Pipe DAMPERS.



THE BEST MADE.

Wood Handle, Iron Handle,

ALL SIZES.

3 In. to 10 In.

It will pay all who sell Dampers to write us.

Logan & Strobridge Iron Co.,

NEW BRIGHTON, PA.

SAMSON SCREW DRIVERS BITS ARE O. K. Send for catalogue of tools to

SAWYER TOOL CO .. Fitchburg, Mass The Rogers & Hamilton Co. (International Silver Co., Successor),

Announce the completion of their new pattern

The MARQUISE.



Factory K., INTERNATIONAL SILVER CO., formerly THE ROGERS & HAMILTON CO., Waterbury, Conn. New York, 9-11-13 Maiden Lane.

# MAKE YOUR MARK

D. M. STEWARD MFC. CO.,

107 Chambers St., New York.

CHATTANOOGA, TENN., U.S.A.

M. STEWARD'S



14. 14. 14 and 1 ft. sizes

#### WONDER ACETYLENE BURNERS.

Recognized the world over as the best Acetylene Burner ever made.

Photometer tests show highest candle power with smallest consumption of gas.

Made only by

STATE LINE TALC CO...

Chattanooga, Teun., U. S. A.

## "Chicago" Autograph Time Recorders.

Give Absolute Security to

Your Pay Rolls. The employee registers by SIGNING HIS NAME. The Recorder PRINTS the TIME opposite the space for signature, and where IT CAN BE EASILY SEEN while signing.

A PERFECT means for keeping (LOSE TIME on PIŁCE or JOB work.

A system that CANNOR BE BEATEN.

The "CHICAGO 'Is the ONLY RELIABLE AUTO-GRAPH RECORDER EVER made.

We also make a KEY-RECORDER.

WRITE FOR CIRCU-LARS. They tell all about both kinds.

See our exhibit inAmerican section of Furniture Building, Espia1 ade des Invaldes, Apply to Franco-American
Co. 162 Ave. Parmentiez,



11 South Water St., Chicago.

Branches—189 Broadway, New York, 911 Girard Blogs, Philadelphia, 348 Markham St., Toronto, Canada. 5 Bedford Ave., Redcross St., London, E. C.

## <del>0000000000000000</del>0

# STANDARD CHAIN COMPA

General Offices, First National Bank Building, Pittsburgh MANUFACTURERS

## Chain Of All Kinds.

#### HARDWARE CHAIN:

Proof Coil, Log, B.B. and B.B.B. Chain, Steel Loading Chain, Conveyor Chain, Traces, Cow Ties, Breast Chains, &c.

#### RAILROAD CHAIN:

Brake and Switch Chains made to specifications and test.

#### AGRICULTURAL AND WAGON CHAINS:

Coil Chain cut to exact length, Stay, Lock, Pole; Anti-Spreader Chains, &c.

#### MARINE CHAIN:

Ships' Cables, Stud Link, and Marine Railway Chains, Dredge Chains, Steam Shovel Chain, High Grade Chain of all kinds. Certificate of test furnished.

#### FOUNDRY CHAIN:

B.B. and B.B.B. Crane Chains made from special high grade material.

PROMPT SHIPMENTS. WRITE FOR PRICES.

#### EGG OPENER. CHAMPION



A perfect work-ing article, once used never withing article, once used never without. Gives perfect satisfaction. No daubing or pieces of shell by using, this Egg Opener. No competition; fast seller and a money makes. money maken; Nickel Plate, 25c.; Silver Plate, 50c. Send for discount on large quanti-

PATENDER JAME A. 1887. ties to State Iron Age. W. R. HARTIGAN, Collinsville, Conn.

#### What You Need

is a cash system that will enable you to

know exactly what you are doing.

q q q



We will tell you what we have if you will write for illustrated catalogue.

HOUGH CASH RECORDER 60., Indian Orchard, Mass., U. S. A.

See! You Don't Have to Pull. A Child Can Do It.















# Walker's Self-Pulling Cork Screws

EVERY ONE TESTED AND GUARANTEED. Several imitations on the market but none as good.

Mird. only by ... ERIE SPECIALTY CO., Erie, Pa., U.S.A.

#### YORK STAMPING COMPANY,

North 11th and Berry Streets, BROOKLYN, N. Y., U. S. A.

Manufacturers of Pressed and Stamped Steel Ware Specialties. Sole makers of the Eclipse Brand Curry Combs, made of the Finest Cold Rolled Steel, in great variety of styles and sizes, and of superior quality and finish, and salable in all the markets of the world; also makers of Fine Polished Steel Cooking Utensils, including the Famous Acme Frying Pans. Catalogue free on application.



CENTRAL HARDWARE CO., Philadelphia Pa.



Make a number of staple articles of Hardware at surprising low prices.

Get their Catalogue and Figures.

New York Office, C. E. PEABODY, No. 90 Chambers St.



## **GUARDIAN REGISTERS**

\$15 to \$50



New Booklet Sent Free

Showing the Register suitable for your busine

WE MAKE THE Squeeze Dry

HAGEN & REID,

Troy, N. Y



SEND FOR OUR

CATALOGUE.

#### REFRIGERATORS.

We stand ready to place the

Maine Manufacturing Co., NASHUA, N. H.

## Diamond Hack Saw Blades

For Cutting Iron, Steel, Brass Tubing, Sheet Metal, Etc.



Our Blades are manufactured by new process, made from finest grade of steel. Made in two styles, viz.:—tegular and Fine. The Regular Blade has 18 teeth to the inch, made for general machinists use for cu ting Iron, Steel, etc. The Fine Blade has 24 teeth to the inch, made for Tubing, Sheet Metal, etc.

Manuf'd by THE SPRINGFIELD MACHINE SCREW CO., Springfield, Mass., U. S. A. SEND FOR CIRCULARS OF FULL LINE. CHICAGO, 36 La Salle St.



PAT. APPL'D FOR.

SCREW DRIVERS MF'O BY BRAUNSDORF-MUELLER CO., Elizabeth, N. J.

# antern Not Needed.

to see the good points Warren's Patent Shelving We are furnishing equipments for many of the leading hardware stores in the U.S. Let us send you our circulars fully describing our system of making an

OLD store NEW.

J. D. WARREN MFG. CO.,

CHICAGO, U.S. A.

OFFICES DEPT. D. Rooms 502-503 MASONIC TEMPLE.



*፩*፡ ባጥጥጥጥጥጥጥጥጥጥጥጥጥጥጥጥጥጥጥጥጥጥጥጥጥጥ

# STANLEY RULE & LEVEL CO.,

Improved Carpenters' Tools.



satisfaction and pay the dealer well.

New York Store, 151 Chambers St. MFG. CO., PIKE STATION, N. H.





NOTICE THE LARGE END LINKS!

NIAGARA WELDLESS Trace Chains are good sellers. They are stronger and more durable than the ordinary welded chains. They are also cheaper.

ONEIDA COMMUNITY, Limited,

Niagara Falls, N. Y., U. S. A.



# MEASURING

Steel, Metallic, Linen, Pocket, Ass Skin, Pat. Leather, Bend and Pressed Leather, etc.

There is not another line of tapes in the market that will equal ours in quality, accuracy, workmanship, neatness and every other way.

CO., SAGIN

New York City Office and Store, - 291 STEWART BUILDING.





#### A COMPLETE TOOL.

Breaker, scraper and shovel combined. The toothed blade breaks ice of any thickness. Will not injure any kind of walk or pavement. Double steel blade. Wrought steel socket Completely galvanized six-inch blade, length five feet. for prices. Send your orders early.

## AMERICAN SCREW CO.,

# SCREWS

MANUFACTURERS OF

SCREWS, TIRE BOLTS, STOVE BOLTS, RIVETS AND BURRS, WIRE NAILS AND - - -



KINDRED ARTICLES IN ALL VA-RIETIES OF FORM AND FINISH, BOTH REGULAR AND SPECIAL.

PROVIDENCE, R. I., U. S. A.

#### HARDWARE SHELF BOXES.

No screws or nails used to work out and cut your shelving.

Look the matter up. Descriptive circular with list of references and prices mailed on request. We also make a general line of Paper Boxes. THE JESSE JONES PAPER BOX CO..

#### HEADQUARTERS...

For the Largest Variety of

HIGH GRADE COFFEE MILL FAMILY



Of best quality latest designs and fine finish. Also a full line of Patented

Household Novelties of superior quality and merit.

Light Builders' Hardware, Etc.

1899 Catalogue.

#### THE X RAY,

A one-pound Coffee Mill with wood frame and glass front. Patent

pending

Something Entirely New. The House-keeper's Delight.

ARCADE MFG. CO., Freeport, III



HELLER BOX CO. MONTCLAIR, N.J. U.S.A.

LIVE HARDWARE MEN USE PERFECT SHELF BOXES WE MAKE PERFECT SHELF BOXES

WRITE FOR CATALOGUE AND PRICES.

C. P. MOORE. RAVENSWOOD, W. VA.



BLACKSMITHS' LEATHER APRONS.

Largest Mirs. in U. S. Split Leather, Sheep, Goat, Hog. Cow, Calf and Horse Hide. THE HULL & HOYT CO. Danbury, Conn.



PORTABLE OVENS

for Bakers, Confectioners, Hotels, etc.

Also the best Core Baking,

Japanning, Enameling, etc. Send for Catalogue

The C. S. Blodgett Co.,

Burlington, Vt., U. S. A.

INTERCHANGEABLE LOCK-CORNER SHELF BOXES For the Hardware Trade. A. H. GREEN, NEW YORK.

ALL ABOUT THE BEST

SEND FOR OUR CATALOG TO-DA MORLEY BROTHERS SOUTH SAGINAW.
TILDEN STREET, MICH 123 SOUTH

#### WIEBUSCH & HILGER, Ltd.,

9-15 Murray Street, New York.

San Francisco Office, 105 Front Street, HUGHSON & MERTON.

#### MANUFACTURERS' AGENTS AND IMPORTERS.

SOLE AGENTS FOR

Essex Horse Nail Co. Horse Shoe Nails.

Clark & Parsons Co., "Lightning" and "Maine" Hay Knives.

Challenge Cutlery Corporation,
Successors to Hatch Mfg. Co., and The Challenge Razor Works,
Razors and Farriers' Knives, Pocket Cutlery, Etc.

> H. T. Seymour Shear Co., Shears and Scissors.

Pope's Farriers' Knives.

Taintor Mig. Co., Taintor Positive Saw Sets.

Press Button Knife Co., Press Button Knives.

Hilger & Sons, German Hardware and Cutlery.

Isaac Nash,
Genuine T. Waldron Scythes.

American Shearer Mfg. Co., Priest's Hand and Power Horse and Toilet Clippers.

> J. T. Henry Mtg. Co., Pruning Shears.

Ferro Carbon Castings Co., "Rex" Hammers and Hatchets.

> Eyeless Tool Co., Eyeless Picks and Tools.

> > Higganum Hardware Co., "Acme" Nippers.

New York Stencil Works, Steel Letters and Figures.

Needham Bros., Ltd.,
"Repeat" Cutlery and Sheffield Goods.

Burgon & Wilkinson, Ltd., Sheep and Garden Shears.

NEW YORK MANUFACTURERS' HEADQUARTERS FOR

Bridgeport Chain Co., Peter Wright's Anvils,

Chesterman's Tapes. Hoffman's Steels, Wade & Butcher Razors and Tools. Roses' Trowels, Brades' Trowels,



#### "LIGHT RUNNING" WASHING MACHINE.

Every Machine Sold Under a Positive Guarantee.

Never leaks or drips. Rigidly built. Splendidly finished. Will wash plain clothes or the finest laces or needlework without the least injury to them—it never rubs off a button or breaks a thread, or tears the clothes in any way. Wood parts of Red Cypress. All metal parts coming in contact with the water are made of Aluminum and will not rust.

Manufactured Exclusively by the

## Chattanooga Washing Machine and Wringer Co.

Barrett's Glass Cutters Standard

other makes combined. Send for prices and ample. W. L. BARRETT, Manufacturer, Bristol, Coan., U. S. A.

#### TAKE A BRACE AND A FORSTNER BIT

You will then understand the motto:

"Once Tried, Always Used."



In various sizes, 45c. to \$1.45 list.

Highest awards World's Fair, Chicago, 1893. Midwinter Fair, San Francisco, 1894.

The Bridgeport Gun Implement Co., 313 BROADWAY, N. Y.

BRIDGEPORT, CONN.



LIGHT WASHER

The Kilbourne Mfg. Co., Fair Haven, vt., U. S. A.

REE SAMPLES **METAL POLISH** 

THE ONLY METAL POLISH POSITIVELY FREE FROM ACID OR GRIT. WRITE GEO. W. HOFFMAN, 287 E. Washington St., Indpl's. Ind.



# GOODELL

## DRILL CHUCKS.

Chucks of good quality are not often sold at prices within range of those we can make you on **Goodell** Drill Chucks.

We make them in four sizes—o to 5-32 in, o to ¼ in., o to 36 in., o to ½ in., and they list from \$1.50 to \$4.00, and what is more we give a liberal discount as well.

GOODELL Chucks hold well.

GOODELL Chucks require no spanner.

MADE ONLY BY

GOODELL=PRATT COMPANY, Greenfield, Mass., U.S.A.

Successful Hardwaremen



HANDLE the RELIABLE DEMOREST.

It SELLS and STAYS SOLD.

BALL BEARING STAND. MARQUETRY WOOD WORK.

SEND FOR CATALOGUE.

We are prepared to furnish the most *reliable* Machine made for your trade, as they are strong, simple in construction, beautifully finished and guaranteed against all defects, we will back it against *any* machine made, at *any* price.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

DEMOREST MFG. CO., Williamsport, Pa.

#### The MILBRADT ROLLING



## STEP LADDERS

have the highest recommendation from thousands of customers. They are the handsomest and easiest - running ladders made; work noiselessly, and are absolutely safe and durable Ladders are made to order and to fit all kinds of shelving, in various styles, to suit all purposes.

Write for Descriptive Catalogue.

Address

G. A. Milbradt & Co., 1922 and 1924 N. Broadway, St. Louis, Mo. Or JOHN CALANDER,

148 E. 8th St., St. Pau



#### **IMPROVED**

96 R

#### Young America Scale.

It is Made of Steel. White Tile Top. Tin or Brass Scoop Top. Brass Dial.

BEST IN THE WORLD.

A most beautiful and attractive scale for all purposes. Beautifully enameled, ornamented and striped. Weighs 20 pound by ounces. Occupies but little space. Is light and easily moved it can be regulated by turning the brass screw on top. It always readily and easily understood. It is a convenient scale to use and has no weights that may be lost. You can look those in the face to prove its accuracy without looking for weights. Every scale examined before leaving the factory are warranted correct.

MANUFACTURED BY

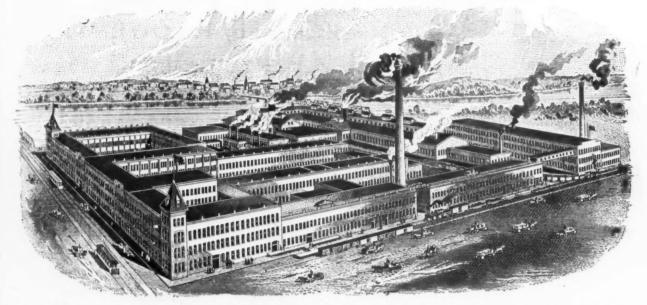
AMERICAN CUTLERY CO., Chicago, III.

San Francisco Branch 105 Front St.

> We are sole makers of the West Lock Faucet and ask you to send for our Prices and Catalogue.

BOSTON & LOCKPORT BLOCK CO., Boston, Lockport, New York, U. S. A. Cable Address—Blocks, Boston.

THIS FACTORY DEVOTED TO THE IS Manufacture of SEWING MACHINES for the Hardware Trade.



We supply more of the trade than all others, and we solicit correspondence from hardwaremen who are looking up the sewing machine business.

# National Sewing Machine Co.,

BELVIDERE, 96 Reade St., NEW YORK.

Address Correspondence

ILL.

49 Jackson Boul., CHICAGO.

Wanted in every town to handle the best selling and most complete line of

IN THE MARKET

SPECIAL INDUCEMENTS

THE LARGEST VARNISH WORKS IN THE WORLD. factories covering 7 Acres, ELM PARK, STATEN ISLAND, N.Y.

CHICAGO. 2620 ARMOUR AVE

GENERAL OFFICES. 29 BROADWAY. NEW YORK.

23 BILLITER ST.

#### Cannon Oilers.

COMBINES Quickness, Economy and Conveniences In dispensable to Manufacturers, Engineers and Farmers Will save one-third of the oil; can use any weight oil in any position. Made in all sizes from a half pint to a half gallon. Use one once and you will use no other.

Write for Prices and Circulars.

STOUTENBURG MANUFACTURING CO., Keithsburg, Ill.

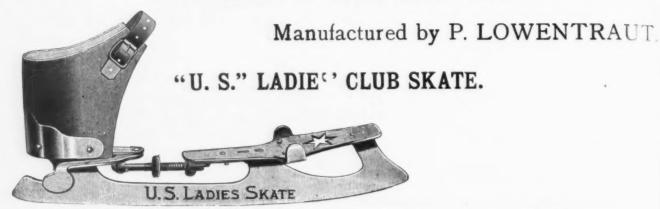
THE BICYCLE STEP LADDER.
Especially adapted for Hardware Stores.





# S. Club Skates

For Season of 1900 and 1901.



"U. S." CLUB SKATE.



Selling Agents:

# JOHN H. GRAHAM & CO.,

P. O. BOX 1042.

113 Chambers St., New York.

STAR AND BOSTON

#### HEEL PLATES.



LASTS



Patent Reversible Iron Standards, Oval, Chisel, Star and Square Top

#### IRON STANDS.

Shoe Repairing Outfits, Lap Lasts, Hob Nails, and a Full Line of Shoe Repairing Supplies.

Address LOUIS SACKS.

63-81 Polk St., Newark, N. J.

WRITE FOR PRICES. . . .

#### GREENERD ARBOR PRESS.

SAVES cleaning out the centres and taking off the dogs,

etc., etc. SEND FOR CIRCULAR. Chandler & Farquhar, Beston, U.S.A

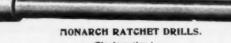


# The STAR HEEL PLATE CO., KEYSTONE MANUFACTURING CO.

MACHINE TOOLS, RATCHET DRILLS, WRENCHES.

Only first-class material used in the manufacture of our tools. Perfect Mechanical Construction, High grade

MONARCH RATCHET DRILLS are especially adapted to use of Bridge or Ship Builders, Boiler Makers, Railroad and Iron Construction Work, and for all purposes where a strong and single action Ratchet Drill is





N. B. The genuine "Westcott" Wrenches have the name "Westcott" on the handle. The "Westcott" Adjustable "S" Pipe Wrench is the most convenient pipe wrench for Steam of Gas Fitter's use, can be used to advantage in a corner, or in a contracted space. It releases quickly and has a firm grip. Made of first-class material. Send for catalog.

KEYSTONE MFG. CO., - BUFFALO, N. Y. New York Office, Alder & Boyd, 37 Warren St.

A NEW TOOL

You will like

STEEL BEARING

The Handiest and Most Perfect Clamp.

THOS. HALL, 10 Water Street, BROOKLYN, N. 7.

TICA DROP FORGE & TOOL CO., N. Y. Office, 296 Breadway, N. Y. City. Factory, Utica, N. Y., U. S. A. PINE AMERICAN TOOLS. SEND FOR FREE CATALOGUE.



Largest Manufacturers of NAIL PULLERS in the World.

DON'T CONTRACT FOR NAIL PULLERS UNTIL YOU GET OUR CONFI-DENTIAL PRICES.



SMITH & HEMENWAY CO., 296 Broadway, N. Y.

Hammer forged from tool steel. Oil tempered. Needle point. Hard wood Handle. Nickel plated brass ferrule.



No. 1,000. Specially designed for hospital use. Length of blade 4½ inches. 5-32 stock.

Send for New Catalogue No. 9, showing our entire line of

HARDWARE AND MECHANICS' TOOLS.

H. H. MAYHEW CO.,

Shelburne Falls, Mass., U. S. A.

WRENCHES.

The Genuine Improved

<u>ւնումը բնա մու մուլ նա մարմարդարար</u> անումա<u>նը ընտ մարմա մարմանական անականանական անականան ընտ մասնական</u>անում

KNIFE HANDLE

SCREW WRENCHES



COES WRENCH CO.,

Worcester, Mass.

v Tork Agents: J. C. McCARTY & CO., JOHN H. GRAHAM & CO.

Has a straight bar and extra long nut for screw in jaw.



THE ATLAS PATENT PIPE WRENCH.

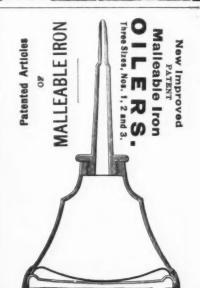
ATLAS PAT IRER . SU

A HIGH CLASS DROP FORGED STEEL TOOL.

QUICK. EFFECTIVE, POSITIVE in adjustment. The good qualities of Chain
Pipe Wrench and Screw Wrench combined without having the faults of either,
Send for our illustrated folder. We believe it will convince you the wrench
is at least worthy of a trial.

Atlas Pipe Wreneh Co. 121 Liberty St., New York.

51 Flood Building, San Francisco, Gal.



Hammer's

Adjustable Clamps, fiall. Iron Hand Lamps, 71. I. Hanging Lamps.

New Pattern Heavy Screw Clamps. STRONGEST IN THE MARKET.

For Sale by all the Principal Hardware Dealers. Send for Price List.

MALLEABLE IRON CASTINGS of superior quality, and Hardware Specialties in Malleable Iron, made to order.

HAMMER & CO., Branford, Conn.

for sale by David Williams Co., 232 William St., N.Y.



# **NEW CATALOGUE**

NO. 16 A

with hardened blades; new style Combination Square, No. 17; Carpenters' Square; Center Square; Pocket Slide Caliper; Micrometer Gauge No. 24, 12 to 36 in.; Micrometers with finger ring; Micrometers with ratchet stop; Attachment for converting a 2 in. into a 1 in. Micrometer; Micrometer No. 127, 0 to 12 in.; Inside Micrometer, 32 to 107 in.; Thickness Gauge, No. 172; Inspectors' Gauges; Little Giant Jack Screws; Complete line of Hack Saws; Universal Surface Gauge, No. 57; Screw-adjusting Calipers; Double Calipers; Carpenters' Dividers, No. 92; Stair Gauge Fixtures, No. 111; Trammels, No. 59; Drill and Tap Gauges.

CATALOGUE NO. 16 A



and the bald temperlog Ecch pair of Pincers ar made without weldin. from two pieces of stet and are pronounced the best all round tool of its kind for a Farmer of a hecknuic.

Ask your jobber for them or write us for prices.

Washington Tool Co., Owatonna, Minn.

Why is the



Because it is the only ROTARY WASHER that has Revolving Steel Ball Gearing, therefore light running and noiseless. No except of steam; made of red cypress lumber; solid leg staves (not removable breakable legs); wheel turns either way; dasher reverses automatically, cleaning clothes without rubbing them to pieces. Made to last,

H. F. BRAMMER MFG. CO., Davenport, Iowa.

# PARKER'S PATENT PARALLEL SWIVEL VISES.





NATIONAL STEEL JOIST HANGER,

FOR WOOD HEADER AND BRICK WALLS.

The best, cheapest, and latest improved on the market. Send for Catalogue.

THE NATIONAL IRON AND WIRE CO.,
Structural and Builders' Sele Makers,
Iron Work. CLEVELAND, OHIO.

Product of Largest and Most Complete File Plant in the World except the Nicholson Works.

## GREAT

#### WESTERN.

A Strictly High-Grade File.

MADE AND GUARANTEED BY

NICHOLSON FILE CO., Providence, R. I., U.S.A.



"BEST BY TEST."

Rasps,

Have been steadily IMPROVED in manufacture, kept constantly up to date and abreast with the TIMES. Their SUPERIOR QUALITY sets a known and tested STANDARD of EXCELLENCE. Made from OUR OWN PRODUCTION of SPECIAL REFINED CLAY CRUCIBLE CAST STEEL and manufactured under machines of OUR OWN PATENTED CONSTRUCTION as well as TEMPERED by a SECRET PROCESS.



NEW 1900 CATALOGUE MAILED FREE ON APPLICATION.

HELLER BROTHERS CO., Established 1836 Newark, N. J., U.S.A.

# HAY-BUDDEN" Solid Wrought Anvils.



AMERICA.

Fully Warranted.

"Experience has proven their worth and demonstrated that the 'HAY-BUD-DEN' anvils are SUPERIOR in QUAL-ITY, FORM and FINISH to any on the market."

Received Gold Medal, Highest Award for Anvils, at Omaha, 1898.

#### Hav-Budden M't'g Co.,

254 NORTH HENRY ST..

BROOKLYN, N. Y.

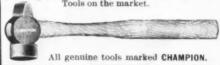
Die and Steel Forgings. Weldless Rings. Forged Tool Steel Spinning Chucks.

Superior to steel castings.

Our steel is made expressly and solely for us. Dies forged under our system will cut 10 to 25 % more blanks than others before regrinding.

CHAMPION TOOL CO., Limited,

CONNEAUT LAKE, PA.
largest and most complete line of Farriers'
Tools on the market.





Jones Patented COPING SAW.

we is constructed with a tubular back, through ans a string or a cable, connecting both ends frame, which causes the biade to turn to any turning the handle only without removing it e work. Send for circular. Dommersnas, 31 & 33 Indiana St., Chicaga.



# The World's Greatest File Works.

ESTABLISHED 1842.

# THE ARCADE FILE WORKS

THE ARCADE FILE WORKS at Anderson, Indiana, is the largest and most completely equipped plant for the manufacture of Files in the world.

The highest inventive genius and mechanical talent has been concentrated on ONE Modern Plant, which is directed by master minds—originators of a distinctly improved prod-

mct-machinery and methods up-to-date.

Back of an Arcade File stands this guarantee: That our Arcade File will cut faster and we ar longer than any other file on the market, and as an "earnest" of this guarantee, The Arcade File Works will send to any responsible Hardware Jobber, Wholesaler or Retailer, one dozen Arcade Files, to become the property of the receiver or returned at our expense if the guarantee is not fully borne out in every particular.

NEW YORK CITY, 97 Chambers St., 79 Reade St. WORKS, ANDERSON, IND. CHICAGO, 118 Lake Street.



R. I.

Chas. Churchill & Co., London, Eng.

Le COUNT'S

HEAVY STEEL CLAMP.



Manufactured by

WM. G. LE COUNT,

Buccessor to C W. Le Count, South Norwalk Cenn,

Send for Catalogue "B" showing full line of

Machinists'
Tools.

The Right
Edge on a
tool and
the Right
Finish on
a casting
is best imparted by
the right
kind of

GRINDSTONE,
We have a large assortment of grits and can furnish
checight thing for any kind of grinding.

THE CLEVELAND STONE CO.,

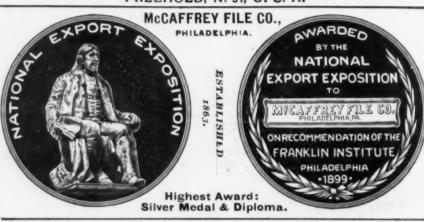
Brie St., Cleveland, Ohio.

Reaches:—Boston, New York, Chicago.



Sole Manufacturers of the celebrated

STOKES BROTHERS HORSE RASPS and ST. CRISPIN SHOE RASPS STOKES BROS. MFG. CO., FREEHOLD, N. J., U. S. A.



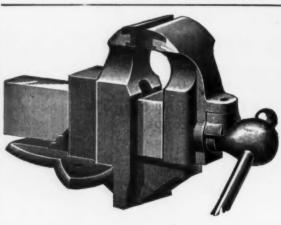
## THE ELGIN WRENCH.





The best general purpose wrench on the market. It will turn a nut, held a pipe or twist a rod
It is not clumsy, but flat and neat. It is the only adjustable wrench (with its range of worg that
can be conveniently carried in the pocket. When jaws wear out, old ones can be replaced with new.
Nickel plated and perfectly constructed. Write us for prices.

STAR MANUFACTURING CO., CARPENTERSVILLE, ILLS.



VISES

SEND FOR CATALOGUE.

HOWARD IRON WORKS, BUFFALO, N. Y.

Also Manufacturers of Passenger and Freight Elevators, Electric, Hydraulic and Hand Power.

# BLACK DIAMOND FILE WORKS,

Established 1863. Incorporated 1805.

Twelve Medals of Award at INTERNATIONAL Expositions.



Special Grand Prize GOLD MEDAL. Atlanta, 1895.

G. & H. BARNETT COMPANY,

Manufacturers of

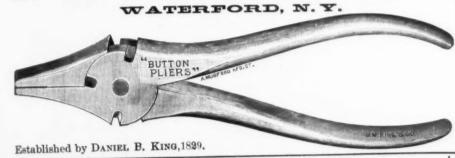
BUTTON'S

AND PLIER COMBINED.

Specially Adapted for Use on Wire Fence.

Also manufacturers of BLACKSMITHS' and MACHINISTS' STOCKS and DIES, PLUG and TAPER TAPS, HAND, NUT and SCREW TAPS, PIPE TAPS and REAMERS.

Price-List on Application.



We make all kinds and sizes of Vises.

Descriptive Catalogue Free.

PRENTISS VISE CO., 44 Barclay Street, New York. Sole Agents for Great Britain: CHAS, NEAT & CO., 112 Queen Victoria St., London E. C

ewis Patent Quick=Acting Vise

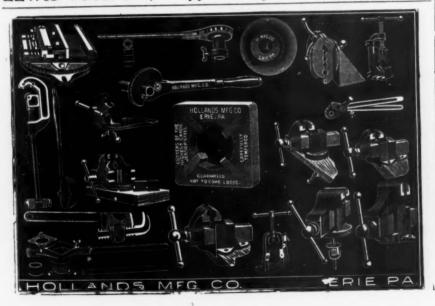


Durable, Powerful and Tenacious as any Screw Vise.

Commence to draw as soon as lever is started and have sufficient gether for any kind of work.

Send for Illustrated Catalogue.

LEWIS TOOL CO., - 44 Barclay St., - NEW YORK





This Chain Pipe Wrench

has interchangeable jaws. Improved method of holding and releasing chain. No locking. Send for

TRIMONT MFG. CO., Roxbury, Mass., U.S.A.

#### L. A. EUCKER STAMP WORKS. LITTLE FERRY, Bergen Co., N. J.



Die Letters, Stamping Letters, Brands, Badges and Medals, Key Checks, Door and Name Plates, Experimental Work, etc.



GEO. M. NESS, Jr.

ENGRAVER AND DIE SINKER, 61 FULTON ST., N. Y.

STEEL STAMPS,

Steel Letters and Figures, Burning Brands, Steneils, &c MACHINE ROUTING FOR THE TRADE.



Set 98 has every good oint possessed by any

Wiebusch & Hilger, Ltd., Agents, 9 to 15 Murray St., NEW YORK.



#### Hand Elevators and Dumbwaiters

made to be sold by the Hard-ware trade. Can be placed in position by any carpenter. Cat-alogue free.

ENERGY ELEVATOR CO., 408 Cherry St., Phila., Pa.

SCHWERDTLE & SIEBERT CLES-BURNING BRANDS L STAMPS & DIES-S-MACH PLATES-CHECKS BRIDGEPORT, COMM

## CONNECTICUT MEAT CHOPPERS



ONLY TWO PARTS TO CLEAN

in three sizes, 8, 10, 12. For Butchers, Marketmen, Farmers Poultry Breeders, Hotels, Restaurants and Public Institutions. Por smaller sixes order "THE NEW CONNECTICUT," No. 20, 40, 60.

New York Office. W. H. JACOBUS, No. 90 Chambers St.

C. M. AVERY & CO.

165 Lake 81.. Chicago, III

THE NEW CONNECTICUT CHOPS and PULVERIZES.

Housekeepers can now SINGLE MACHINE. **FOOD** 





**PEANUT BUTTER** CHOCOLATE, No. 3.

CRACKERS, ETG.

ONLY TWO PARTS TO CLEAN.

Manufactured by O. B. WOODRUFF, Patestown, Pa.



Peoria

are the strongest, best made machines for the purpose on the market to-day. They have Cedar Tubs with Galvanized Hoops. Inside castings, Tinned Malleable Iron. Leg brackets, malleable iron and bolted to tub with Tinned Bolts. Will wash as well as by hand, with less than 1/3 the labor.

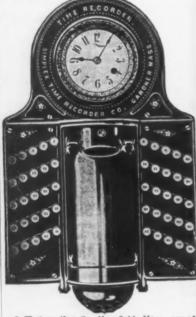
Manufactured by

JIEN & MORSE CLARK, O

402 S. WASH. ST., PEORIA, ILL.



The "Simplex."



8. W. Card Mfs. Co., Mausfield, Mass., say of it, "Giving perfect satisfaction and in our opinion is superior to anything we ever saw in the way of a time recorder."

Simmoss Mfs. Co., Kenosha. Wis., say, "We consider your recorder the very best on the market, and shall be glad to answer any inquiries directed to us, or show our system to any one." (21 recorders.)

SIMPLEX TIME RECORDER CO., GARONER, MASS., U. S. A.

Bros. & Wakefield Co.)
212 Wabash Ave., hicago, Ill.
N.E. Agents, Moore & Booth, 178 summer St.
(Opp. So. Station), Boston, Mass.

"HANDY" Clothes Line Send for price.

E. H. WILSON & CO.

Boston (Allston), Mass.



CUTS EVERYTHING EDIBLE.

CUTS FINE OR COARSE JUST AS NEEDED.

Cutting Parts are of Tempered Steel. All Farts can be Duplicated.

····· THE MOST SATISFACTORY FAMILY MEAT AND FOOD CUTTER EVER MADE

MANUFACTURED BY

THE PECK, STOW & WILCOX CO.,

SOUTHINGTON, CONN.,

27 Murray St., - NEW YORK.

The Ideal Receipt Book Free upon Application.

## **The Standard Hardware Lists** For Pocket, Desk and Price Book Use.

ELEVENTH EDITION.

Revised to Date of Purchase. Enlarged to 129 Pages. Containing Over 300 Lists.

These lists are printed on thin paper of good quality and on only one side of each page, so that they may be cut out and inserted in price books.

The Standard Hardware Lists is an indexed book equally convenient for purpose

BOUND IN FLEXIBLE CLOTH COVER. PRICE, ONE DOLLAR, POSTPAID.

DAVID WILLIAMS COMPANY, Publishers, 232-238 William St., N. Y.



R. OSTRANDER &

23 DEY STREET, NEW YORK.

Manufacturers of

Speaking Tubes, Whistics, Oral, Electric, Mechanical and Pneumatic Annunciators and Belis.

Complete outilits of Speaking Tubes, Whistics, Electric, Mechanical, and Pneumatic Bells. A full line always in stock. Fend for new catalogue. Factory, DeKalb Ave., near Knickerbocker, Brookiyu, N. Y.



中できるとうなっている



Ocean Bilge Pump.

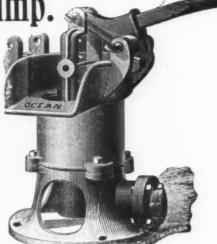
H. 765 illustrates our Ocean Bilge Pump for pumping water from excavations and for irrigation and other purposes. The cylinder is brass, lined the vaives rubber faced. The lever may be worked from three different positions. Ihis pump is arranged with elevated base for attaching hose or wrought-tron pipe at side, but can be fitted with bottom connection.

#### THE HUMPHRYES MFG. CO.

Mansfield, O.

ALSO MAKE...
Cistern Pitcher, Wind Mill, D A.
Force, Set Length, Horizontal, AntiFreezing Pumps. Hydraulic Rams,
Cast Iron Sinks, Garden and Fire Engines, Iron and Brass Pump Cylin-

gines, Iron and Brass Pur ders, Double Acting Pump.



# Take off your Hat to Myers



Write us for prices on the most admired Force, Lift, Tank and Spray Pumps, Forks and Hay Carriers on Earth Manufactured by the Largest Pump and Hay-Tool Works in the World. 323-page Catalogue Free. The Right Time to Write is Right Now!

F. E. MYERS & BRO., ASHLAND, OHIO.

## PUMPS ron Hand and Wind Mill **SINGLE** and DOUBLE

**ACTING PUMPS** for all purposes. SAST IRON SINKS. SINK BRACKETS.

TEND FOR CATALOGUE.

The Barnes Mfg. Co., MANSPIELD, O.



# WIND MILLS.

All Kinds and Sizes.
and "Fast Mail" Iron Pumps.

Galvanized Steel Star Direct Stroke Wind Mills.

Galvanized Steel Star Direct Stroke Wind Mills.

Galvanized Steel Power Wind Mills.

Was Tanks, Wood or Steel.

Tabular Well Tools, Valves, Tubular Well Points, Drive Well Points, Working Barrels, Hose and Hose Goods, Pipe and Fittings, Hydrants and Street Washers, all kinds of Water Supply Goods. Estimates and advice furnished on Steel Sub-Structure work of all kinds.

of all kinds.

Largest and finest equipped factory in America for this class
of goods.

Inquiries respectfully solicited. Catalogue with discount
sheet malied on application. Address

FLINT & WALLING MFG. CO., 50 Oak St., Kendaliville, Ind.



LANGE OF STATE OF STREET STATE STATE STATE OF STREET STATE S

Red Jacket Galvanized Pipe.



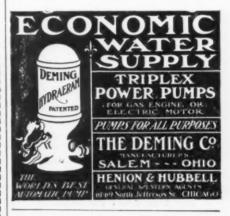
Made in Sizes 1 to 3 Inch.

Especially for PUMP WORK,

IS ALSO SUITABLE FOR STEAM, GAS and WATER PIPE, MINING and IRRIGATING.

It is light, but has great strength, and has been tested over 1000 pounds pressure. Write for circulars and net prices.

RED JACKET MFG. CO., Davenport, Iowa, U.S. A.





Nickel Plated Brass, Suc-tion and Force House

## PUMPS

Strong, Light, Durable. Send for Catalogue.

Athol, Mass., U. S. A.

COPPER, PORCE, WELL, CISTERN, AIR CHAMBER

S. WILDER & CO.,

HOLLISTON, MASS., U. S. A. Send for catalogue and prices.

CLASPS THE CLOTHES ON THE LINE. U.S. Spring Clothes Pin will not damage



United States

MONTPELIER, VT., U. S. A.



O DEALERS.....

While we know that our wares are the best on the market for design, finish and durability, and that our price the market for design, finish and durability, and that our price is always consistent, we nevertheless are spending thousands of dollars acquainting the buying public with their trade-names, thereby assisting you in making sales. You must recognize this fact, and to protect yourself you must carry a complete line of our make of goods.

We deserve your patronage and good will because our wares are the best for the money and the because we are doing most good for you. We are making the following wares household names and you cannot

wares household names and you cannot afford to be without them...this is not

sentiment but sound business: AMETHYST, DRESDEN, COPENHAGEN, COLUMBIAN.

TRIPLE COATED ENAMELED WARES. We want your order now...if it is only a small trial order to begin with... and we know it will prove to you that our products are the best and most satisfactory sellers. Send to us for free samples of wares BELLAIRE STAMPING CO., HARVEY, ILLINOIS. and catalogue.



Is unquestionably the best machine of its kind ever offered to the public. It will cut without crushing raw or cooked meat, sea food, fruit, vegetables, etc., into coarse or fine pieces, according to the cutter used, of which three accompany each chopper. It has eliminated all the objectionable features of other choppers and has added several improvements that are distinctly its own. It is always in order and the knives require no sharpening.

An additional and exclusive feature of the Star Food Chopper is a plate hinged at the top of the hopper which, when pressed on the food to be cut, forces it upon the feed screw, thus preventing the possibility of injuring or soiling the fingers, which is liable to occur in using other choppers.

For sale by all dealers.

CHAS, D. BROWN, Sole Agent.

CHAS. D. BROWN, Sole Agent, 160 Duane Street, New York City

# Aluminum Oil Heaters.

235,000 IN USE.

NOVELTY MANUFACTURING CO.,

Jackson, Mich., U. S. A.

#### THE NEW WAYNE ROTARY WASHER

No complicated gearing to get out of order or broken. Simply one large pinion fastened on the shell or cover; one small pinion attached to the post; another small pinion mesh ing in the large one pinion attached to the post; another small pinion mesh ing in the large one attached to shaft, and the Rack Bar; that's all. Washer operated right or left, the large hand wheel is attached to side of tub, does not have to be lift-ed with the cover; when latter is down it is always ready for business.

WOODMAN'S

TICKET



THE ANTHONY WAYNE MFG. CO., Ft. Wayne, Ind.

PUNCHES.

Send for List of goo DIBS.

R. WOODMAN MEG. & SUPPLY CO.,

# Seamless - SAVORY ROASTERS - Patented



THE BEST TO USE-BECAUSE-

Bottom is raised off the oven, so meat will cook evenly on all sides and cannot burn. Needs no water no grease, no attention.

THE ONLY SELF-BASTING ROASTER-BECAUSE-

Bottom is OVAL and juice from meat flows to the lowest point where it is vaporized and depo-again on the surface of the meat.

THE EASIEST TO CLEAN—BECAUSE—
It is perfectly smooth and seamless inside, with NO CORNERS OR SEAMS TO COLLECT BURNER OR SEAMS. An excellent seller to those who want a GOOD ROASTER.

Write to Our House Nearest You.

#### SIDNEY SHEPARD & CO.,

Boston, Mass., U. S. A.

BUFFALO, NEW YORK, CHICAGO, ST. LOUIS KANSAS CITY, DENVER, 145-149 Seneca St. Cliff St, Randolph St. No. 2d St. W. 10th St. Wazee St.

Non-Breakable Handles

For Mrs. Potts'

## **COLD HANDLE IRONS**



If you want the kind that will NOT break

BUY THE "ENTERPRISE"

with FORGED IRON STRETCHER

It is "THE BEST"

All sets of "ENTERPRISE" Cold Handle Irons are equipped with

"THE BEST" HANDLE

Insist on your Jobber supplying you with "ENTERPRISE" Irons—they are no higher in price

The Enterprise Mfg. Co. of Pa.

Philadelphia, Pa., U.S.A. San Francisco Branch, 105 Front St.



WRITE FOR PRICES.

S & B GALVANIZED and CORRUGATED WASH TUBS.

Strongest, Best and Most Handsome Wash Tub Made.

NO BUCKLING OR BENDING,

CORRUGATED ON BOTH SIDES AND BOTTOM. SIDES MAY BE USED AS A WASH BOARD.

nake all descriptions of Pieced, Heavy Polished, Stamped, Japanned and Gray Flint Enameled Ware.

The Sterling Chopper

The Sterling Slicer.

TWO UNEQUALED KITCHEN TOOLS.

Have you seen the slicer? It's just out.

N. R. STREETER & CO.,

ROCHESTER, N. Y.





## There Never was



a time that clear, purified water did not gladden the household. It lightens the laundress's cook satis-cook satis-faction and charms en-tire family at table.

Ask your jobber for

#### Water **Purifier**

"PERFECTION" BUCKET PUMPS.

Write for sample outfit to-day. Catalog free.

ST. JOSEPH PUMP & MFG. CO., St. Joseph. Mo., U. S. A. \*\*\*\*\*\*\*\*\*\*



A. C. WILLIAMS,

# Cast Hammers and Hatchets

THE LARGEST VARIETY OF SAD IRONS IN THE

and House Furnishing Goods.

We made and sold 2,000,000 Sad Irons in 1899.

SEND FOR CATALOGUE.

SURPLESS, DUNN & CO., 55 Warren St., New York, Exclusive Export Sales Agents.



& cccccccccoops

#### Quickest Freezing Best Results Economical

The Standard of Excellence Everywhere SOLD BY ALL LEADING JOBBERS. SEND FOR CATALOGUE.

Durable

THE WHITE MOUNTAIN FREEZER CO., NASHUA, N. H.



piece of wire, retinned.



Toaster and Broiler, made of coiled wire, re-tinned.

HAS NO EQUAL.

LLOYD MANUFACTURING CO., - - MINNEAPOLIS, MINN. SOWERBY BRIDGE, YORKSHIRE, ENGLAND.

#### 1898 SAUSAGE LARD PRESS.

(Patented September 14, 1897.)



Steel

Door Hangers,
Door Track and Stay Rollers,
Door Hinges and Butts,
Felloe Plates and Washers,
Warehouse Trucks and Specialties.

# McKINNEY MFG. CO.,

ALLEGHENY, PENN.



Po YOU know what a Poised Carrier is? If not, buy and sell the Coburn Rolling Door Hangers and you will get them, and you do not get them with any other make. They will when used in conjunction with the Coburn Round Trough Trolley Track be found to be the "Ne Plus Ultra" in door hangers.

The Coburn Trolley Track Mfg. Co.,

Holyoke, Mass., U. S. A.



No.40. No. 6.

Actual Size

# CABLE CHAINS.

No. 110 Copper for Sash of 400 lbs.

No. 10 " " " 250 "

No. 30 " " " 125 "

No. 40 " " " 75 "

No. 6 Steel

No. 60 "

No. 55 "

Transom Chains,

Window Sash Pulleys,

Sash Fixtures.

Write for Catalogue of Hardware Specialties.

The Smith & Egge Mfg. Co., BRIDGEPORT, CONN.

### THE OGDEN

# Automatically Regulated

Liquid Door Check and Spring.



Easily Applied.

Positively Regulated.

Refilled Without Removing.

Cannot Leak.

The ONLY Check that FULLY controls the Door,

FULL DESCRIPTIVE CATALOGUE.

APPLY TO

OGDEN MFG. CO., - Newark, N. J.



Our Cow Ties are unquestionably the most reliable and attractive stable fixtures that this or any other country can produce. Every part is made from best grade of steel and by patented WELDLESS PROCESSES.

THEY WILL PLEASE YOUR CUSTOMERS.
Manufactured only by

THE BRIDGEPORT CHAIN CO., Bridgeport, Conn.



For Sale by all Jobbers.

Packed

5 gross

in a case.

THE

J. R. CLARK CO., Sole Mfrs.,

MINNEAPOLIS.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*



### CATALOGUES.

- No. I, GENERAL.
- No. 2, REGISTERS.
- No. 3, RAILROAD HANGERS.
- No. 4, WIRE WORKERS' GOODS.
- No. 5, HANGERS AND RAIL.
- No. 6, MALLEABLE HARDWARE.

### STOWELL'S

Hot Air Registers

ARE

STANDARD GOODS.

All Sizes in Stock.



# IT'S SIMPLY SURPRISING!

That's what our customers say, who use the

LE ROY NOISELESS HOUSE DOOR HANGER.

A sample set will prove this.

WILCOX MFG. CO., AURORA, ILL.

### REGIS-**TERS** and LHTUKS. NOT IN COMBINA TION.





With steel roller bearings, easy to push and to pull, cannot be thrown off the track—hence its name—"Stayon."

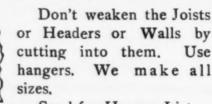
Mechanically perfect yet simple in construction. 3% inch wheels. Track of double strength of others and reversible. Each door can be raised or shoved outward independent of the other, or held rigid as desired—an especial feature in the "Stayon" hanger.

Write for descriptive circular and prices. Exclusive agency given to right parties who will buy in quantity.

F. E. MYERS & BRO.,

Ashland, Ohio.

### **BUILDING?** ARE YOU



Send for Hanger List.



SERVEY MFG. CO., Boston, Mass. THE W. J. CLARK CO., Salem, Ohio



"NEVER-BREAK." Best Finished Goods Made. SOMETHING NEW. WE HAVE IT.

MARKS ALLOWED. SKATES FOR

WRITE TO US FOR PRICES, ETC.

THE AVERY STAMPING CO., Cleveland, Ohio, U. S. A.

J. C. McCARTY & CO., 10 Warren St., New York Representatives.

# MOORE'S Improved STORM WINDOW FASTENER.

CUTS FULL SIZE.

With these fasteners storm windows can be adjusted in a minute without the use of a screw driver or other tool than a small hammer, doing away with the inconvenience of climbing a ladder. The windows are held in place more securely than in any other way yet invented.

COSTS BUT A TRIFLE. LASTS A LIFETIME.

SEND FOR CIRCULARS.

# THE STANLEY WORKS,

NEW BRITAIN, CONN. 79 CHAMBERS ST., NEW YORK.

No 1708. Outside Fastener.

命

奉

袋

di.





THE LATEST, NEATEST, STRONGEST. The altogether BEST ON THE MARKET. Made from the finest grade of Hinge Steel, cut with the grain, full width at the pintle, gives this hinge three times the strength of the common strap hinge.

WRITE FOR CIRCULARS AND PRICES.

LAWRENCE BROS., STERLING, ILL. Manufacturers of Steel Door Hangers, Hinges, Pulleys,

and other Hardware Specialties. 



檢

物 

9999999

To secure the best device on the market for hanging sliding doors, order the McCabe Ball-Bearing Door Hanger. Write for catalogue and prices. The McCabe Hanger Mfg. Co., 540 W. 22d Street, New

### United States Steel Lock Co., CLINTON, IOWA,

SOLE MARERS

# WARNER LOCKS.

Cold Rolled Steel. Accurate in Construction. Unsurpassed in Quality.

### HARDWARE.

Artistic in Design. Elegant in Finish. Moderate in Price.

### The Walda Sectional Window Weight.



Square and Round Weights. Hang exactly from centre Only 10 inchpockets required. Eliminates use of lead weight.

### The Hardware Dealer

with one-sixth the stock required in one piece weights can fill any order. Weight crated with 100 lbs. in a box, both plainly marked.

### The Contractor

saves time, money and delay by balancing windows exactly at once SEND FOR CIRCULAR.

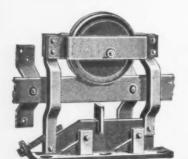
Barney & Reed M'f'g Co.,

35 Water Street, - BOSTON, MASS

E. BROWN & CO.,

McKean and Meadow Sts... PHILADELPHIA,

### "LANE'S BALL BEARING"



# Best House Door Hanger

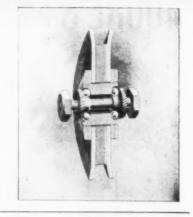
MADE.

Other Styles for Less Money.

Lane Brothers Co., Manufacturers,

Prospect and River Sts.,

POUGHKEEPSIE, N. Y.





Write for our SAMPLE PULLEYS FREE FOX MACHINE CO, 195 No. Front St., Grand Rapids, Mich



For Butler's Pantry Doors and all other Swing doors the . .

### Bardsleu" Checking Spring Hinge

is unequalled. It closes the door with a soft, gentle and noiseless action and stops it at once at the centre. It goes in the floor under the door.

Made in 6 Sizes. Catalogue Free. JOSEPH BARDSLEY,

147 to 131 Baxter Street,

### WRIGHTSVILLE HARDWARE CO.

Manfrs. of Gate, Blind and Shutter Hinges, Gate Latches, Prame Pulleys, Casters, Shelf Brackets, Sash Lifts, Drawer Pulls, Hooks, Thumb Latches and other goods.

SEND FOR CATALOGUE

WRIGHTSVILLE, PA.

# Palmer's Common Sense Frame Pulley.



MANUFACTURED BY

PALMER HARDWARE MFG. CO., TROY, N. Y.

### Pullman Sash Balance Co.,



MAKERS OF THE "Pullman" Hardware

Specialties

MAIN OFFICE AND WORKS. Rochester, N. Y., U. S. A.

### No Nails. Use a ham mer and a common mail set. Method of fastening the

GRAND RAPIDS ALL STEEL SASH PULLEYS. Save Freight, Save Time, Save Money. Samples Free

GRAND RAPIDS HARDWARE CO., 21 Pearl St., Grand Rapids, Mich.



### WIRE FLY KILLER.

The original and up-to-date Fly Killer on the market. It has no equal. Flies cannot escape it. Will not crush, soil or mar the most delicate wall paper or ceiling. A Quick Seller, Good Profits.

Patented Jan. 8, 1995.

J. P. BIGELOW, Mfgr.



# HALT!

HARDWARE DEALERS

### MORTON'S BRONZE AND STEEL CABLE SASH CHAINS

As the best substitute for sash cords ever made. Some in daily use over 25 years. These chains are easily applied to any window. Will run equally as well on either round or square groove pulleys.

MANUFACTURED BY

### THOMAS MORTON.

65 Elizabeth Street,

NEW YORK.



READ'S FLUSH FACE STOP SCHEWS and WASHERS make a per-fectly smooth finish on Window and Door Stops. Also for Marble and Tile Fasteners, Send for sam-ple of our sash spring.

A. P. READ & CO.,

Manufacturers. 14 and 16 No. Canal St., Chicago, U. S. A

RGG We make the largest line in the world. Send for samples and prices. STANDARD CO. BRATERS.

107 Haverbill St., Besten, U. S. A.



### **STEVENS** ARMS

Make an Exceptionally Fine Line for the Hardware Trade.

All Carefully Boxed-Shelf goods in fact.

All Fully Guaranteed-By a company of 35 years' experience and reputation.

All Fine Sellers-Not a line which costs money to carry and moves slowly.



No. 17 Plain open sights,

No. 18 Target sights, -

No. 19 Lyman sights,

\$8.50 \$9.00

Weight, fully boxed, 5 pounds.

22, 25 and 32 Calibres.

Rim Fire.

Send for Complete Catalogue to

J. STEVENS ARMS & TOOL CO., P. O. Box 46, Chicopee Falls, Mass.

NEW YORK OFFICE, 318 BROADWAY.

We desire to correspond with the trade everywher

### PALMER'S PALMER'S HAMMOCKS

HAMMOCK SUPPORTS, HAMMOCK AWNINGS, HAMMOCK MOSQUITO CANOPIES, TRAPEZE SUSPENSION BARS.

> Largest Variety of Patterns, Colors and Accessories. Also Manufacturer of CANOPIES, MOSQUITO NETTINGS, CRINOLINE DRESS LINING, WINDOW SCREEN CLOTH, SCHOOL BAGS, etc., etc. Send for our new catalogue for 1900.



ARAWANA with Support, Awning, and Canopy

### I. E. PALMER.

MIDDLETOWN. CONN., U.S.A.

New York Office, 62 White St.

INFRINGERS ARE BEING PROSECUTED.



ARAWANA with Canopy.



# DROP-FORGED STEEL LATHE DOGS.

FROM 3/8 INCH TO 4 INCH.

MACHINISTS' TOOLS AND DROP FORGINGS OF EVERY DESCRIPTION AND FOR ALL PURPOSES, IN IRON, STEEL, COPPER AND BRONZE.

THE BILLINGS & SPENCER CO., HARTFORD, CONN., U. S. A.



N these days of smokeless powders and high pressures why take chances on filling your face with powder, losing your eyesight and possibly your life by using a repeater that opens on top and ejects into your face, when you can avoid the possibility by buying a MARLIN? The Solid Top Frame and Side Ejecting principle is the most important improvement made in repeating arms for many years. Complete illustrated catalog for 3 atamps.

THE MARLIN FIRE ARMS CO.

NEW HAVEN, CONN.

THE GONG BELL CO.

E. Hampton, Conn., U. S. A.



ABBE'S
VANKEE
PATENT
GONG

DOOR BELLS

Globe and Silver Chime Bells, Table Call Bells, Bicycle Bells, Signal Trip Gongs, Automobile Bells, etc

ESTABLISHED 1866. Send for Catalogue and Prices.

04040404040

MANUFACTURERS OF



Bells

of all descriptions also BICYCLE SPECIALTIES.

Established in 1838.

AUTOMOBILE BELL.

Bevin Bros. Mfg. Co.,

EAST HAMPTON, CONN.



IF YOU SHOOT A RIFLE. Pictol or Shotpun, you'll make a Buil's Eye by sending three & atampe for the Ideal Hand-Book, 126 pages FREE. The latest Encyclopedia of Arms, Jourders, Shot and Bullets. Mention Iron. Age. Address IDEAL MFG. CO., New Baven, Conn., U.S. A.



Sterling Bells.

CONTINUOUS RINGING

With
Rotary
Movement
and NonRevolving
Gongs.
Best on
Earth.
Send for Catalogue

N. N. HILL BRASS CO., EAST HAMPTON.

### **PETERS**

REINFORCED and NEW VICTOR SHELLS.

Loaded with King's Smokeless Powder. Give the highest velocity, fine pattern, low pressure, and light recoil; are cleanest and smokeless. For sale by all leading Dealers.

THE PETERS CARTRIDGE CO.,

CINCINNATI, O.

Eastern Branch, No. 80 Chambers St., New York. Hibbard, Spencer, Partiett & Co., Chicago. F. B. Chamberlain Com Co., St. Louis. C. G. Grubb, Agt., Pittsburg. A. L. Peters, Agt., St. Paul,

### The Markham Air Rifles



The "KING" single shot, the "KING" repeater, the "PRINCE" repeater, and the "CHICAGO" breech loader, air rifles, absolutely the greatest article of amusement known. Shoots B B dropshot Forsale by all jobbers. Send for catalogue.

THE MAREHAM AIR RIFLE CO., Plymouth, Mich., U. S. A.

We work all kinds of Sheet Metal in all kinds of shapes.

DAVIS & BUXTON STAMPING CO., Swo

3 Cypress St., Worcester, Mass

THE FILEM, QUICK

SKATE

SHARPENER

15 CENTS

\*\*\*\*\*\*\*\*\*\*\*

Send Sample or Drawings for Price.

The FILE'M QUICK
Is the Simplest and Most Popular



ON THE MARKET.

Holders are made of Steel-

GUN METAL FINISH.

FILES HAVE FOUR GOOD SIDES.

Attractively Displayed.

Quick Seller.

Large Profit.

ORDER NOW .- The boys can't wait.

THE OSBORN MANUF'G CO.,

Display Card 7½ x 7 inches. Cleveland, O.

OHIO.

PENNA.

NEW YORK.

7 Factories. KEGS\_20,000 Daily.

For Nails, Spikes, Bolts, Nuts, Rivets and Horse Shoes.

THE EDWIN BELL & SONS CO.,
YOUNGSTOWN, O.



A Great Labor Saver.

Will pay for itself in a single day. Where Steel Giant Grubbers are kept and shown a large trade is soon established. They are a necessity to almost everybody owning land. Moderate price. Large margin of profit to the dealer.

Sample orders solicited and promptly filled.

New Century Manufacturing Co. 48 East 8th Street, New York.

# Headquarters for Cutlery

American, English, German, French, Swedish.

Pocket Knives

Table Cutlery,

Razors.

Carvers,

Scissors,

Butchers' Knives,

Shears.

Painters' Knives.

KEY RINGS, CORKSCREWS, TWEEZERS, Etc.

SOLE ACENTS for R. MURPHY'S Oyster Knives, Paper Hangers' Knives, Etc.

NEW ENGLAND ACENTS for EMPIRE KNIFE CO.'S Pocket Knives.

Tubing.

Cycle

Steel

Spring

" SWEDOH "

Carbon

Fiffy

Clincher "

DAME, STODDARD & COMPANY,

BOSTON, MASS.



eyele, Sleigh, House, dand frip and Rotary Door

Send for Catalogue and Price-List. starr Bros. Bell Co., Easthampton, Conn., U.S.A.

STRIEBY & FOOTE CO.,

HEWARK, H. J.

# DROP

THE M. SEWARD & SON CO., NEW HAVEN, CONN.

Estimates promptly furnished.



Worcester, Mass., U. S. A. Park Ave. and Chandler St.

# **MILLETT'S**

DOUBLE DOORS,

One closing the oven when the other is open.

Saves Fuel, Saves Time.

SEND FOR CIRCULAR.

MILLETT CORE OVEN CO., Brightwood, Mass.

The ovens can be seen in the sample rooms of the S. Obermayer Co., either in Cincinnati or Chicago, and in the show rooms of J. W. Parson & Co., Philadelphia.; Ergland Agents: J. W. Jackman & Co., 39 Victoria St., London, S. W.

**Metal Skylights** 



OF ALL DESCRIPTION.

ESPECIALLY FOR FACTORIES

seng for Catalogue and Prices.

THE G. DROUVE COMPANY, Bridgeport, Conn. Ventilators and Sheet Metal Work.



STAMPED, DRAWN AND PLATED

# BURDEN'S **HORSE SHOES**

"Burden Best"

Iron

Boiler Rivets.

The Burden Iron Co.

TROY, N. Y.

PHOENIX

# HORSE SHOES

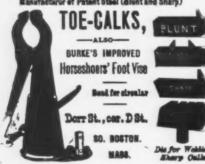
PHOENIX HORSE SHOE CO.,

Rolling Mills and Factories.

Poughkeepsie, N. Y.

Joliet, Ill.

P. P. BURKE, of Patent Steel (Blunt and Sharp)





The Scranton Forging Co.

Scranton, Pa.

# DROP FORGINGS ORDER.

ALL PATTERNS. SOLD EVERYWHERE.

J. C. McCarty & Co. Agents. **NEW YORK** 

HORSE NAILS

SE

Tu

Fre

Re

Ci

WE

Manufactured by

NATIONAL HORSE NAIL CO.,

VERGENNES. VERMONT.

RHODE ISLAND PERKINS HORSE SHOE CO.,

HORSE AND MULE SHOES OF THE PERKINS PATTERN. SPECIALTIES: X L Steel Shoes, Toe and Side Weight Shoes and

Goodenough Shoes.

Works at VALLEY FALLS, R. I. F. W. CARPENTER, Pres.

Office, 112 Industrial Trust Building, PROVIDENCE, R. I. R. W. COMSTOCK, Sec'y. C. H. PERKINS, Gen Manager. CHARLES R. STARK, Treas.



THE NAILS WE MAKE.

To Suit the Times. W. M. MOONEY & CO., Ausable Chasm, N. Y.

# DROP FO

TRANSUE & WILLIAMS CO., ALLIANCE, OHIO.

Brown's Patent, Seamless, Oil Chamber Truss and Clip Bar Skeins.

~~~~~~~



W. B. MITCHELL, Agent, Manufacturer. Office: 80 Michigan Avenue, Chicago, U. S. A. WORKS AT GRAND CROSSING, ILLS.

"WITHINGTON" HANDLED HOES.

PLANTER HOES,
COTTON HOES,
BLACKLAND HOES,
COTTON CHOPPERS,
PLANTATION HOES,
ETC., ETC.

2000

Designed from careful study of the wants of trade in every locality.

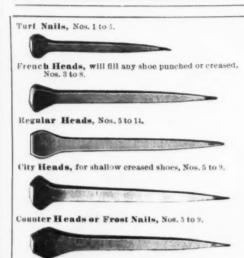
Not built on theory, but correct, practically and theoretically.

Highest quality,-Largest variety.

WITHINGTON & COOLEY MFG. CO.,

JACKSON, MICH.

Send for catalog of 1900-1901.



PUTNAM NAILS.

Putnam Hot Forged and Hammer Pointed. Neponset Hot Forged and Sharp Pointed. Franklin Hot Forged and Sharp Pointed.

The Neponset is produced by the same method and of the same material as the Putnam, with the exception that it is sharp pointed.

The Franklin Nail will be put up under private brands in

quantities not less than 80 boxes.

Trade correspondence solicited.

For terms and discounts address

PUTNAM NAIL CO., Boston, Mass.

Or { 235 Lake St., Chicago, Ill. 12-14 Drum St., San Francisco, Cal.

RICHARD ECCLES, Auburn, N. Y.,

MANUFACTURER OF

CARRIAGE AND BICYCLE FORGINGS.



Send for Our Catalogue.

WE MAKE A SPECIALTY OF

AXE WEDGES.

LIGHT MALLEABLE IRON CASTINGS.

- - - WRITE US - - -

THE WALTER W. WOODRUFF & SONS CO.,
MOUNT CARNEL, CONN., U S A.

Tount Carmel Ox Shoes. Eagle and Tount Carmel Screw Clamps. Carriage Mountings. Storm Window Fasteners.



The Keystone Jack

A LIFTING JACK FOR VEHICLES.

It has but three pieces in its construction.

It has a broad base, 6 in. x 8 in., to prevent timping.



(Pat. June 26, 1900.)

Prices and Discounts on Application.

P. C. MORROW, Iron Founder and Machinist, ENGINEER and CONTRACTOR,

Newport, Perry Co., Pa.,

Sole Manufacturer in the United States.

HORSESHOE - H - CALKS (Neuss')

Always Sharp! No Slipping of the Horse!

No Injuries as caused by other Studs!

Great Saving of Horses and Herseshoes

Price-List, with Testimonials, Post Free.
Patentees and Sole Manufacturers.

LEONHARDT & CO., Berlin-Schoneberg, Germany.



Drag Scrapers, Wheel Scrapers

For years we have been producing the highest grade of implements for Contractors' use including many styles of Wheel Barrows, until now we are the largest makers of such in the world Ask for our Catalogues descriptive of same.

The Kilbourne & Jacobs Mfg. Co.,

Columbus, O., U. S. A.

The American Hay Knife

SICKLE EDGE.

MANUFACTURED ONLY BY

THE NEY MANUFACTURING CO., CANTON, OHIO.



in all sizes and varieties, to fit any axle. They last forever. Either direct or stagger spoke, Can't break down; can't dry out no resetting of tires. Good in dry weather as in wet weather. Send for catalog & prices. ELECTRIC WHEEL CO.,

Box 281 OUINCY. IU.



DROP FORGINGS.

WYMAN & GORDON,

WORCESTER, MASS.

DEERLESS GRASS HOOKS, CORN HOOKS. KNIVES, HUSKERS, AND BRAKES, FAMILY CLEAVERS, LAWN AND GARDEN WEEDERS, Etc.

Send for Catalogue.

WALLINGFORD MFG. CO., Wallingford, Vt., U. S. A.

Succeeding Carver Mfg Co. and Granville

We manufacture a full line of

BALL BEARING and LAWN



MOWERS

Send for Price BLAIR MFG. CO., Spring field, Mass.,

FORGINGS Carriage, Bicycle and Special,

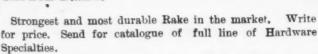


Cronk's

Wrought Steel

Champion

Garden Rake



CRONK HANGER CO.,

Elmira, N. Y.

CONTINENTAL TOOL CO.,

FRANKFORT, N. Y.

The Finest and best equipped Steel Goods Plant in the World . .

EDGE TOOL CO.,

Gas City, Ind.,

MANUFACTURERS OF SUPERIOR QUALITY

HEDGE KNIVES, CORN KNIVES, COBN HOOKS, GRASS HOOKS. Weymouth Patent Hay Knife.

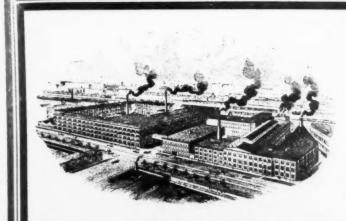
Write to our Agent for prices, A. G. Sherman, 14 Warren Street, New York.

AKE Axle Grease Coach Oil

SNOW FLAKE AXLE GREASE CO., 3 Sudbury Street, Boston.

Fend for our price list and a few facts boiled down.

T. W. GILBERT & CO., 108 No. 3d Street, Philadelphia, Pa.
Distributing Agents for Penn., Del., N. J., Md.



FACILITIES UNSURPASSED

For the Manufacture of

Wood and Steel Wheelbarrows, Hand Carts,

Drag, Road and Wheel Scrapers, Steel Skips,

Grading and Pavement Plows, Steel Sewer Buckets,

Store and Warehouse Trucks.

IMMENSE LINE.

LOW PRICES.

SYRACUSE CHILLED PLOW CO.,

Syracuse, N. Y., U. S. A.

THE BLACK DIAMOND SOLID SOCKET SHANK Shovels and Spades.

D. Ha
D. Hong
Long
D.
Long
Long 5 5 5 5 5

Quality and finish un-surpassed by any in the market. MANUFACTURED BY

Louis Shovel Co.,

ST. LOUIS, MO., U. S. A.



THE ORATOR and IMPROVED HUNNINGS

solid back dust transmitters in Wall, Desk and Cabinet Styles.

They are Convenient, Dur-able and the best of talkers.

A trial will convince anyone of their superiority on either short or long distance work

Anyone can make an instrument that will work well at first, but to produce one that will continue to meet every proper demand is quite another problem.

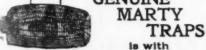
The Orator will.

Manufactured by

THE RAWSON

ELYRIA, O., U. S. A.

The Only First Hand Source of **GENUINE**



is with BURDITT & WILLIAMS, Imperters, BOSTON, MASS.

THE "IOWA" ICE CHISE



ALL STEEL.

Socket extra heavy and extra long.

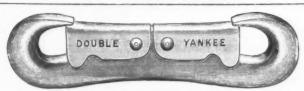
Blade Heavy and Beveled.

Gold Bronze and Silver Polish Finish.

High Grade Long Handle.

THE IOWA FARMING TOOL CO., Makers,

FORT MADISON, IOWA.



Covert's "Yankee" Snaps.

MADE IN ALL STYLES AND SIZES.

For Sale by Jobbers at Manufacturers' Prices.

COVERT MFG. CO.,

West Troy, N. Y.

Theelbarrows, Drag and Wheel Scrapers and Trucks

924 POPLAR STREET



Write for Prices and Cat.



****************************** A Tire Setter and Spoke Holder Repair Outfit.

With this complete device, containing all tools necessary, a farmer, livery-man or blacksmith cas set a tire, or repair a broken spoke or wheel without removing it in a very few minutes. When once in use it cannot be dispensed with. Descriptive or cular on application.

IMPERIAL BIT AND SNAP COMPANY,
770 Wisconsin Street, RACINE, WIS.

113 CHAMBERS ST

NO WEBER HOISTING EN-GINE EVER GETS OUT

of our shops until it has n thoroughly tested un-full loads. We are de-mined that no buyer il regret his purchase ause of any fault in our lines. Our Catalonaires

Weber Gas & Gas P. O. Box Chicago Office, 1531 Monadi & Gasoline Engine Co., O. Box 1114 V, KANSAS CITY, MO.

ESTABLISHED 1887 THE STORM MANUFACTURING CO The Largest and Leading Makers of

Dumb-Waiters and Hand Elevators PACTORY & MAIN OFFICE.

NEWARK, N. J.

than with any other reliable firm in buying useful articles, including furniture, Beds, Mattresses, Stoves, Sewing Machines, Planos, Organs, Watches, Bicycles, Safes, Blacksmiths' Tools, Mills, Lathes, Gasoline & Steam Engines, Plows, Scrapers, Carriagee, Harness, Saddles, Wire Fencing and Scales of all varieties. The Premium Wagon or Stock Scale, Steel Frames, Lists free, Chicago Scale Co. CHICAGO, ILL.

THE HOLLOW GRIP HORSE SHOE

SAFEST, MOST SENSIBLE, DUR-ABLE AND ECONOMICAL SHOE ever put upon the market. Made in 36 sizes; for horses, mules and ponies. No calks to sharpen. Relief from jar and strain. It is light, prevents interference Cannot

ference
The proper shoe for a horse and will
outwear any other. Endorsed by all
users. Send for illustrated booklet giving full description, etc., of shoe.

Special discounts to dealers.



THE HOLLOW GRIP HORSE SHOE CO., 1303 Chamber of Commerce Bldg. CHICAGO, ILL., "Dept. G."



Slin.

Carriers, Hay Slings, etc. THERE IS MONEY IN IT. THE "LOUDEN GOODS"

have no equal and are fast taking the place of

everything else. Don't waste time on some the sale of the goods that command the "cream of the trade." Address

LOUDEN MACHINERY CO., Box A, Fairfield, Iowa.





"OUR FAVORITE" CIDER MILLS and WINE PRESSES

EQUAL.

R. W. WHITEHURST & CO., Norfolk, Va., U. S. A.

VAN DORN'S Steel



Joist Hanger HAS NO EQUAL Send for Catalogue.

THE VAN DORN IRON WORKS CO.,

CLEVELAND, OHIO.

STRUCTURAL STEEL AND ORNAMENTAL IRON WORKERS

"CANFIELD" Set Screw Protector.



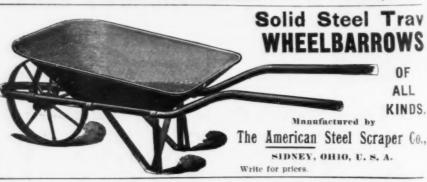
It is made of specially prepared rubber, and will last for years. Can be applied by any workman, the elasticity of the rubber being utilized to hold it in place over the screw. Highly commended by the Liability Companies and Factory Inspectors.

Information and prices promptly fur-

H. O. CANFIELD,

Manufacturer Mechanical Rubber Goods. BRIDGEPORT, CONN.

Latest Improved Type Motors & Dynamos SHEFFIELD CAR CO.





The Best on Earth



Cactus. Japanese, Park. National, Pacific, and Imperial;

also our % in. Special Coupling Spray Nozzle Our general line Hose Pipe, Menders, etc., are equa the best made.

Send for our New Catalogue. It interest you for the Season 190L

Pleuger & Henger Mfg. Co., ST. LOUIS, MO.

teel &

uber

Henry Mfg. Co Foun er Br en Re ican Aprican Ble rican Ca rican Cu

ican Ir ican Mi rican Me rican P arrant C erican Re erican So perican Si erican Si erican T

rican En

cade File ade Mfg strong halt Re Macl ol Pum kins, E. tlanta Ju illas Bolt

das Pipe

esswor

ALPHABETICAL LIST OF ADVERTISERS

A	B
achtnery Co 59	BI
A me shear Co	B
Work 1 33	B
Mann. W. J 8	B
A Irlance Machine Works 77	B
1 xep. Henry 40	B
1 . s Mfg. Co 59	B
Consolidated Coal	B
Foundry Co 37	B
annier Bros 49	B
a et, E, B	В
A.B. F. Co 43	B
resican Appraisal Co 92	B
American Blower Co 69	B
eican Carburizing Co 34	B
A prican Cutlery Co108	B
American Gas Furnace Co 56 American Emery Wheel Wks. 57	B
American Iron & Steel Mrg.	B
Cu	B
American Mfg. Co6&94	-
American Nickeloid Co 4	E
American Pig Iron Storage	P
Warrant Co 28	I I
American Pulley Co 52 American Railway Supply Co. 93	
American Screw Co106	1
American Shearer Mfg. Co 93	I E
American Sheet Steel Co1&2	1 1
American Steel Scraper Co2	1 2
American Steel & Wire Co 10	1
American Tin Plate Co 2	1
American Tool Chest Co10 American Tool Works Co 73	1
Ames Sword Co 4	1 1
Ansonia Brass & Copper Co	2 1
Arcade File Works	1 ,
Arcade Malicable Iron Co S Arcade Mfg. Co	6
Armstrong Bros. Tool Co 6	1 1
Armstrong, R. S. & Bro 8	
Asher, A 8	0
Ashton Valve Co 4 A-phalt Ready Rfg. Co	9
Athol Machine Co11	
Athol Pump Co11	6
Atlanta Junk Co	
Atlas Bolt & Screw Co	12
Atlas Mfg.Co1	11
Atlas Pipe Wrench Co	
Automatic Machine Co	
Avery Stamping Co93&1:	22
В	- 1
Babrock & Wilcox Co	47
Baeder, Adamson & Co	
Balrd, C. R. & Co	82
Baird, U. Machinery Co	
Jaker, Jas. H. Mfg. Co	
Sall Bearing Co	
Bardsley, Jos	24
barker & Chard Mch. Tool Co.	69
Barnes, Wallace Co	79
darnes, W. F. & John Co	66
DATLES Mfg. Co	117
Parnett, G. & H. Co	115
Barney & Reed Mfg. Co Barnum, E. T	123
Marrett, W. L	107
daush Mch. ToolCo	72
ayley, Wm. & Sons Co	72
leadily & Co	68
Brainard Milling	,
Meth Co	75
Server Brog Co	110
H.& Co	142
or Coke Co	. 55
	, 08
Beilem Fdry. & Mch. Co.	126
er Coke Co Bei em Fdry. & Mch. Co Bei em Stoel Co	
bros, Mrg. Co	. 65
bros, Mrg. Co	. 65 . 95
and Drill & Tool Co Box of Hardware co. Box of Hardware co. Box of Hardware Co	. 95 .10.
em Fdry, & Mch. Co. em Stoel Co. Drill & Tool Co. Hardware co. Step Ladder Co. J. F. & Keeler Mfg. Co. a & Spencer Co. Damn Iron F dry. Ladder Go. Go. S. Spencer Co. Go. Spencer Co.	. 95 .10.

3	ETICAL	1
В	dake & Johnson 16	Clev
B	Has Co., E. W	Clev.
	lock-Pollak Iron Co 88	Clev
B	lodgett, G. S. & Co106	Clev
	loker, Hermann & Co 28	
		Clev
		Clev
I	Borgner, Cyrus 35	
	Boston Belting Co 52	Cob
2 2	Boston Blower Co	Cob
ì	Boston Gear Works	Cod
1	Boston & Lockport Block Co.108	Coe
	Botjer, C 88	Colt
	Bowler, Geo. H 88 Box, Alfred & Co 54	Con
i	Braddock Mach. & Mfg. Co 14	Con
1	Bradlee & Co 26	Con
1	Bradley Co 70	Li
1	Braeburn Steel Co	Con
		Coo
1	Bridgeport Brass Co 2	Coo
	Bridgeport Chain Co121	Cor
1	Bridgeport Deoxidized Bronze	Cos
1	& Metal Co 2 Bridgeport Gun Implement	Cov
	Co107	Cov
]	Bridgeport Mfg. Co100	Cox
1	Bridgeport Safety Emery	Cra
١,	Wheel Co 56 Briggs, Marvin 81	Co
	Bristol Co 1	Cra
	Brooks, M. S. & Sons 9	C
1	Brooks, M. S. & Sons 9	Cre
	Brown, Chas. D	Cre
	Brown, E. E. & Co	Cro
1	Brown Hoisting Machinery Co 51	C
1	Brown, R. H. & Co 96	Cro
	Brown & Sharpe Mfg. Co 80	
	Buck Bros	Cui
1	Buffalo Emery Wheel Co 55	Cui
1	Buffalo Forge Co98x142	
1	Buhl Malleable Co 53	Da
1	Builders Iron Foundry 57 Bullard Mch. Tool Co 78	17.0
1	Burden Iron Co128	1/0
1	Burditt & Williams131	Da
	Burke, P. F	1 .
1	Burnham, Geo. Co	Da
1	Butterfield & Co 66	Lin
		Da Da
	С	De
1	Cabeen & Co St	De
)	Cahall Sales Dept1&9 Caldwell Mfg. Co 9	0
2	California Wire Works 5	120
	Canfield, H. O	
	Canton Steel Co 3	0 D
2	Capewell Horse Nail Co	~
6	Carborundum Co 5 Card, S. W. Mfg. Co 6	2
5	Carlin's Sons. Thomas Co 6	
6	Carter & Hakes Machine Co. 7	UD
13	Cary Mfg. Co	- 1 -
2	Cary Spring Works	
14	Central Hardware Coil	
5	Chambers Bros. Co	Ti D
79		
66	1	
17	Cit How & Population 1	
23	1 01 1 0 & Ca	
3	Chapman Vaive Mfg. Co	43 E
07		P .
72	I at seems one Washing Mach	
72	A stages Co 1	
68	Cheney, S. & Sou	35 I
	Cherry Valley Iron Co	01
7: 3	Chicago Drop rorge & Fdy.	
2	Chicago Flexible Shaft Co	36 I
98	Chicago House Wrecking Co.,	86
. 4		92 1
4 5 3	5 Chicago Scale Co	18
?	I CHICAGO LIMIC MCMINGO CO	103 142
3	6 Chrome Steel Works	31
6 9	5 Church, Isaac	18 26
10	Cincinnati Mach. Tool Co	64
13	1 Cincinnati Planer Co	77
	Clapp, E. D. Mrg. Co 9 Clarendon Boiler Wks	41
10	5 Clark, J. R. Co	121

LIST O	L
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	The set
Co 1	Eva
leveland Crane & Car Co 54	Eva
lieveland Elevator Bucket Co 49	Eve
Sleveland Register Co 71	Exc
Cieveland Stamping & Tool Co. 98	Exe
Cleveland Stone Co	
Cleveland Wire Spring Co 9	Fair
Clinton Wire Cloth Co 12 Cobb & Drew 16	Far
Cobb & Drew 16	Fay
Coburn Trolley Track Mfg.	Fer
Codling Mfg. Co 87	File
Coes Wrench Co111	Fini
Coes Wrench Co111 Columbus Mall, & Gray Iron	Fish
Casting Co 37	Fite
Conn. Valley Mfg. Co 98	Flag
Consolidated Iron & Steel Co. 24 Consolidated Rau'y Electric	Flin
Lighting & Equipment Co. 37	For
Continental Tool Co130	Co
Cook, A. D 48	For
Cook. Asa S. & Co 66	For
Cook, H. C. & Co10t	Fox
Cornell, J. B. & J. M	Fra Fra
Cotton, Barclay W. & Co 82	Fra
Covert Mfg. Co131	Fri
Covert's Saddlery Works 95	
Cox, Justice, Jr. & Co., Ltd 29	Ful
Cramp, Wir. & Sons S. & E. B.	
Crane, W. M. Co 38	
Crescent Phosphorized Metal	
Co 8	
Crescent Steel Co 30	
Cresson, Geo. V. Co 50 Cronk Hanger Co	
Crosby Steam Gage & Valve	Ger
Co 41	
Cross & Speirs Machine Co 69	Ge
Cunliffe, R. M 85	
Cushman Chuck Co 69	A CAR
Custimen Character Committee	GII
D	Gle
Dallett, Thos. H. & Co 7	
Dame, Stoddard & Co12	
Danielson Mch. & Tool Co 8	. 1
D'Amour & Littledale Mch. Co 6 Darby, Edw. & Sons 1	0
Dart, E. M. Mfg. Co 4	
Davis, W. P. Machine Co67&8	
Davis & Buxton Stamping Co.12	6 Gr
Davol, John & Sons	-
Dawson, A. L. & Co	
Dawson & Good & In 8 Defiance Mch. Wks	12 G1
DeKalb Fence Co	
Deming Co1	
Demorest Mfg. Co	
Denman & Davis	85
Diamond Drill & Mch. Co	83 11
Diamond Tack & Nail Wks	20 H
Dickinson, T. L	
Dienelt & Eisenhardt	63 11
Dillon-Griswold Wire Co Dimmick, J. K. & Co	
Disston, Henry & Son	97 13
Divine Bros. Co	53 11
Dixon, Jos. Crucible Co	
Doan, J. B. & Co	
Dodge Machine Screw Co Dodge Mfg. Co	03
Doebler Mfg, Co	
Donaldson & Newton	94 1
Draper Machine Tool Co	
Drouve, G. Co	127 I
Du Bois Iron Works Dadgeon, Richard	61 1
Duff Patents Co	
Dunbar Bros	6 ,
Dunham Nut Co	16 4
Dupont Mfg.Co	10
Durant, W. N	8 1
9	1
	1
2 Eastern Bridge & Structural	20
CO	20
Eastern Forge Co	. 52
1 Eckstein, C. G.	. 54
Elmer & Amend Kle tric heel Co	. 33
Eimer & Amend Eie tric heel Co Ellis & Haifenbarger Empire Pipe Bending & Sup	. 11
Empire Pipe Bending & Sup	. 5

	icker, L. A. Stamp Wks115	H
EV.	ans, F. H	H
	rans, G. F	H
	celsior Needle Co142	H
SI	teter Machine Works 69	H
	F	H
Fa Fa	Armount Machine Co 50 Arrel Foundry & Mch. Co., . 31	Б
	y. J. A. & Egan Co 58	H
	erracute Mach. Co 75	H
	erro Carbon Casting Co 35 ler & Stowell Co 43	H
Fi	nished Steel Co 24	B
	sh. H. C. Machine Works 67 tch, W. & E. T. Co. The141	H
Fl	agg, Stanley G. & Co142	H
FI	lint & Walling Mfg. Co117 ord Bit Co101	1
F	orest City Foundry & Mfg.	H
(Co128	E
	orest City Steel & Iron Co., 88 orter-Miller Engineering Co 40	E
F	ox Machine Co124	E
	rankford Steel Co 36 rank-Kneeland Mach. Co 33	E
F	ranklin, H. H. Mfg. Co 92	F
	rick, H. C. Coke Co 94 rost Wire Fence Co 7	Ŀ
	ulton Iron & Engine Works, 53	
	G	I
G	ardner Bros 85	I
G	arland Chain Co102	I
	arrison, A., Foundry Co 83 arry Iron & Steel Roofing Co 9	I
G	arvin Machine Co 70	1
	em Mfg. Co 95 eneral Electric Co 44	1
	eneral supply Co 50	1
G	eometric Drill Co 61	,
	erlach, Peter & Co 75 ibson, Wm. D. Co 4	1
G	ilbert & Bennett Mfg. Co 12	1
	ilmour, J	1
6	loepel & Raegener 7	
	Fong Bell Mfg. Co	1
6	Goodell-Pratt Co108	
	Goodwin & Kintz Co 93	
	Gould & Eberhardt 65 Graham, John H. & Co110	
1	Grand Crossing Tack Co 16	1
	Grand Rapids Hardware Co124 Gray, Robt. J 88	
1	Green, A. II	1
	Greiner, F	
	Griswold Wire Co	
	н	1
1	Hagen & Reld10	
1	Haines Gauge Co 38)
1	Halk & Naumann	3
1	Hall's Samuel Sons 1.	2
	Hammer & Co11	1
	Hannan & Finton 8 Harrington, E. Son & Co51&7	
	Harrington & King Perforat-	
	ing Co	D
1	Arms Co	17
	Harris Machinery Co 8 marrisburg Fory & Mach Wks 8	1
3	Harrisburg Pipe Bending Co.,	
7	Ltd Harrison Safety Boller Wks	16
9	Hart, R. A	2
0	Hartford Steam Boller Insp.	
6	and Ins. Co	#1 #3
7 5	Hartman Mfg. Co	9
3	Harvey, Arthur C. Co Haskell, Wm. H. Mfg. Co	33
8	Haven Malleable Castings Co.	87
	Haws, W. H. Fire Brick Co	35
0	Hay, Budden Mfg. Co1 Hazard Mfg. Co	7
5	Hay, Budgen Mg. Co. Heald, L. S. & Son. Heat Transmission Co. Helinisch's, R. Sons. Helier Bros. Co. Helier Bros. Co. Hendere 's A. L. Sons. Henderson Bros.	5.5
9	Heller Bros. Co.	0:
14	Heile: Box Co	6
17	Handor daching (A	35
11	Hendryk, A. B. Co	20000
5 15	Hess, Sayder & Co	45
98	Highard, W. H. Hickman, Williams & Co Hickman, Williams & Co	65
19	Hertz T & Son	-

-	-	1	
1	7.01	1. 01-	arke & Co 94881
I	H	I Dry	rer Co
ŀ	111	1 Too	ol Co 60
I	11	llmar	Jones Co67&85
ł	111	tner,	H. A. Sons 85
1	10	bson,	Houghton & Co 28
1	10	felle	Mfg. Co
ł	10	fima	n. Geo. W107
ŀ	10	ggso	n & Pettls Mfg. Co 60 s Mfg. Co
ł	10	lling	er Fence Co
1	10	HOW	Grip Horse Shoe Co. 132
I	10	rton.	rgh & Scott
Ì	10	ugh	Cash Recorder Co 103
1	10	ught	on & Buxton Mfg. Co. 98
2	10	Ward	n, C. B. & Co
l	10	Ward	& Morse 7
1	10	wsor	& Howson 7 , Harvey14
.1	11	Der.	S. V. & Co
- 1	3.1	111 /2	Hove Co
1	Hu	inger	ryes Mfg. Co117 ford, U. T. Brass &
	- (oppe	r Co 9
1	11	int, C	. W. Co
1		ALLDU	110Rets Mach. Co 68
			1
	Id	eal M	achine Works 61
	III	inois	fg. Co126 Maintenance Co 83
	111	mols	Screw Co
	111	inois	Steel Co
	In	peri	Zinc Co 3 al Bit & Snap Co131
Г	In	dian	Edge Tool Co. 130
ŀ	Ln	dian	apolis Drop Forging
	ln	gers	oll-Sergeant Drill Co 48
	II	itern	ational Silver Co 103
	II	itern	ational Sprinkler Co 3 arming Tool Co181
	E	onsi	les Co 4
1	Is	laac .	oseph Iron Co 88
1	L	res, t	I. B. & Co
	1	,,,,,,	
1	,	o olra	J
1			on Flue Scraper Co 48 y, Steinmetz & Co 7
1	J	arecl	1 Mfg. Co 64
			son Iron Co
	J	enck	es, E. Mfg. Co 5
	J	enki	ns Bros 1
			ns Iron & Tool Co
	9	ennt	ngs, C. E. & Co
			ngs, Russell Mfg. Co101
ı			p, Wm. & Sons
3		Johns	son, Iver, Arms & Cycle
0		Wo	on, Wm. C. & Sons Mch.
å	1		85
1 4	1	Jones	B. M. & Co 23
4	1	Jone	Jesse Paper Box Co106 & Dommersnas113
5		Jone	& Lamson Machine Co. 94
	ŀ	Jone	s & Laughlins, Ltd 28
17			K
55		Kanı	neberg Roofing & Ceiling
		Co	ey, Jerome & Co 29
16	- 8		& Hagerty Mfg Co119
	- 1	Kell	ey, B. F. & Son 82
			nedy, Julian 38 nedy, Waiter 40
41		Ken	nedy Valve Mfg. Co42
6	3	Kev	stone Drop Forge Works, 54
3		Key	stone Mfg. Co 110 1 Bros. & Eurgner Steel
3		W	re Co 7
3		Kide	ter, R. E
1		Kill	ourne & Jacobs Mfg. Co. 130 ourne Mfg. Co
5 4	5	Kiln	ner Wire Mfg. Co 11 ball, C. J. Co100
01	į.	Kin	ball Bros & Sprague 18
U	6	Kok	omo Fence Mach. Co 8
	5	Kuj	ter, t. E. orn & Hishop Co. 31 ourne & Jacobs Mfg. Co. 19 ner Wire Mfg. Co. 11 totall, C. J. Co. 10 ball Bros & Sprague. 18 g. J. M. & Co. 115 omo Fence M. ch. Co. 3 ferle, Jno. C. 33
	4 2 0		L
4	8 9	La	
6	6	Lad	Belle Steel Co
2	7	Lan	e ity Engineering Co 4: nond, David

A cet class of the
				,
Latrobe Steel Co 42	Murdock Parlor Grate Co 64	Pitkin, A. B. Machinery Co 82	Sigourney Tool Co 66	U.S. Steel Lock Co
Laughlin, Alex & Co 40	Myers, F. E. & Bro117&122	Pittsburgh Mfg. Co 62	Silver Lake Co124	Universal Machine Co
Law, Ernest & Co 29	N	Pittsburgh Reduction Co 94	Silver Mfg. Co	Up-to-date Mfg. Co
Lawrence Bros	Nanz. C. & Co 8	Pittsburgh Screw & Bolt Co 16 Pittsburgh Shear, Knife &	Simonda Mfg. Co	Utica Drop Forge & Tool
	Nash, Geo. & Co 29	Machine Co 37	Singer, Nimick & Co 30	V
LeCount, Wm. G111	National Cutlery Co100	Pittsburg Steel Shafting Co 80	Skinner Chuck Works 60	Valentine, M. D. & Bro.
Alberta Charles de Collection de	National Elastic Nut Co 14 National Horse Nail Co128	Pleuger & Henger Mfg. Co132 Plume & Atwood Mfg. Co 2	Slate, Dwight Mch. Co	Van Dorn Iron Works Co Van Wagoner & William
	National Iron & Wire Co112	Plymouth Mills	Sloss Sheffleld Steel & Iron Co.24	Hardware Co
	National Machinery Co 50	Pneumatic Crane Co 51	Smith & Egge Mfg. Co121	Variety Machine Co
Leschen, A. & Sons Rope Co., 7	National Pipe Bending Co 45	Pollock, W. B. Co 42	Smith & Hemenway Co111	Virginia Iron, Coal & Coke
portion included on contraction	National Saw Co 98	Pond Machine Tool Co 76	Smith, M. B.Co	Vitrified Emery Wheel Co
	National Sewing Machine Co. 109 National Specialty Mfg. Co120	Poole, Robt. & Son Co 47 Port Chester Bolt & Nut Co 18	Smooth On Mfg. Co	Vulcan Iron Works
	National Steel Co	Potter & Johnston Co 74	Snell Mfg. Co	W
ANTAICLEUCK M. ATTAINS TO THE TOTAL CO.	National Tube Co 21	Potts, Horace T. & Co 29	Snow, L. T141	Waggoner Watchman
Lindsay, W. W. & Co 46		Poulterer & Co 81	Snow Flake Axle Grease Co 180	Co
	Naugatuck Mfg. Co 47 Ness. Geo. M., Jr	Pratt Chuck Co	Snyder, W. P. & Co	Wallace, Wm. H. & Co Wallingford Mfg. Co
	New Albany Mfg. Co 36	Prentice Bros. Co	Southern Railway Co 85	Wardlow, S. & C
	New Britain Hdw. Mfg. Co 18	Prentiss, Geo. W. & Co 8	Southwark Fdry. & Mch. Co., 43	Ward, Edgar T. & Sons.
Lodge & Shipley Mch. Tool	New Century Mfg. Co128	Prentiss Tool & Supply Co 88	Speldel, J.G 50	Warren City Boller Works
	New Doty Mfg. Co 72	Prentiss Vise Co115	Spencer's, I. S. Sons	Warren, J. D. Mfg. Co
English 11 of the control of the con	New England Motor Co 45 New England Steel Casting	Presbrey Fire Brick Co 85 Pugh, Job T	Spencer Automatic Mch. Screw Co142	Washington Coal & Coke Under
Logan & Strobridge Iron Co102 Long & Allstatter Co 67	Co	Pullman, J. Wesley 29	Spencer Wire Co	Washington Tool Co
Lorain Foundry Co 82	New England Structural Co., 20	Pullman Sash Balance Co124	Spofford, W. S. & Son 30	Waterbury Brass Co
Lorain Steel Co 30	New Freedom Wire Cloth Co. 18	Putnam Nail Co129	Springfield Drop Forging Co., 129	Waterbury Farrel Foundry &
	New Haven Mfg Co. 64	Q	Springfield Mch. Screw Co104 Springfield Mfg. Co 57	Machine Co
	New Haven Mfg. Co 64 New Haven Wire Mfg. Co 5	Quint, A. D 65	Standard Chain Co	Watson, E. P.
	N. J. Iron & Metal Co 88		Standard Co124	Watson-Stillman Co
Lukens Iron & Steel Co 27	N. J. Wire Cloth Co 12	R	Standard Fdry. & Mfg. Co 35	Wayne, Anthony Mfg. Co
Lund, S. T 82	Newkirk, J. B. & Co 29	Rand Drill Co 47	Standard Mchry. & Equip-	Weber Gas & Gasoline Engine
Lyon, N 95	Newport News Shipbuilding & Dry Dock Co 43	Randolph-Clowes Co 2 Rawson Electric Co	ment Co 84 Standard Paint Co 9	Webster, Warren & Co
M	New Process Twist Drill Co., 58	Read, A. P. & Co	Standard Scale & Supply Co., 68	Welch, T. F. Mfg. Co
McCabe, J. J	N. Y. Air Compressor Co 48	Reade, Wm. A. & Co 85	Standard Tool Co 58	Weliman Seaver Engineering
McCabe Hanger Mfg. Co. 16&123	N. Y. Blower Co	Reading Crane & Hoist Works 54	Standard Varnish Works109	Wells Pros. & Co.
mccanrey rue comments	N. Y. Machinery Depot 81 N. Y. Stamping Co104	Reading Hardware Co 99	Stanley Works	Wells Bros. & Co
arctiure, 6. 11., 500 & Co 40	Ney Mfg. Co	Reading Screw Co 6 Red Jacket Mfg. Co117	Stanley Works	Co
	Niagara Machine & Tool	Reece, E. F. Co	Star Heel Plate Co110	West Side Foundry Co 35
McDowell, Stocker & Co 84	Works 71	Reed & Curtis Mch. Screw Co 19	Star Mfg. Co114	Wetherill, Robt. & Co
	Niagara Screw Co	Reeves, Paul S142	Starr Bros. Bell Co127	Wheeler, Mifflin & Co
DICCIOWALL, J. M. C. CO 40	Nicholson File Co95&113 Nicol & Co100	Remington Arms Co 1	Starrett, L. S. Co	Wheeling Mold & Foundry Co
	Nicoll, B. & Co 88	Republic Iron & Steel Co1&141 R. I. Perkins Horse Shoe Co128	Steel Rail Supply Co 83	Wheelock, Lovejoy & Co
McKenna Bros. Bross Co 92	Niles Tool Works Co76&82	Rhode Island Tool Co 17	Sterling Emery Wheel Mfg. Co 55	Whitcomb Mfg. Co
McKinney Mfg. Co121	Nilson, A. H. Mch. Co 77	Richard Mfg. Co 68	Stevens, J. Arms & Tool Co. 125	White Mt Erroras Co.
MCNau & Harim Mik. Co 42	North American Metalline Co 8 North Bros. Mfg. Co 90	Richmond Cedar Works120	Steward D. M. Mfg. Co103 Steward & Romaine Mfg. Co.,	White Mt. Freezer Co
Machinists Supply Co 87	Northampton Emery Wheel	Ridgway, Craig & Son Co 58 Ripley & Bartlett 18	Ltd 18	Whiting Mfg. Co
Macomber & Whyte Rope Co. 7 Magnolia Metal Co 1	Co 88	Riter-Conley Mfg. Co 20	Stewart Iron Works 8	Whitlock Coil Pipe Co
Main Belting Co 49	Northern Engineering Works 54	Rockford Bolt Works 14	Stewart Wire Co 6	Whiton, D. E. Mch. Co
Maine Mfg. Co104	Norton Emery Wheel Co 56 Norton Mfg. Co 101	Rockwell Engineering Co 40	Stocking, E. B 7	Wickes Bros
Manning, Maxwell & Moore 83	Norwalk Iron Works Co 48	Rogers, M. H	Stokes Bros. Mfg. Co114 Storm Mfg. Co123	Wiebusch & Hilger, Ltd
Manville Machine Co., E. J 80 Markham Air Rifle Co126	Norwalk Pattern & Mfg. Co., 34	& Drill Wks 72	Stoutenburg Mfg. Co109	Wilbraham-Baker Blower Co.
Markle Lead Works 98	Novelty Mfg. Co118	Rossiter, McGovern & Co 84	Stover Engine Works 41	Wilcox Mfg. Co
Marlin Fire Arms Co126	Nut & Washer Mfg. Co 14 Nuttall, R. D. Co 73	110000000000000000000000000000000000000	Stow Flexible Shaft Co 63 Stow Mfg. Co 54	Wilder, S. & Co
Marshall & Huschart Machy.		Co 8 Rowland, William & Harvey142		Williams, A.C.
Co	0	Rudolphi & Krummel 71	Straight Mfg, Co 92	Williams, J. H. & Co
Mason Regulator Co	Obermayer, S. Co 83	Russell, Burdsail & Ward 19	Streeter, N. B. & Co119	
Matthiessen & Hegeler Zinc	Ogden Mfg. Co121	Rutter, A. T 2		
Co 2	Ogden & Wallace 32		Sturtevant, B. F. Co 78 Summit Wire Co	Willson Aluminum Co
Maurer, H. & Son	Onelda Community		Sundries Mfg. Co101	
May & Spalding	Ornamental Iron & Wire Co. 8	Sabin Machine Co 5	Superior Charcoal Iron Co 27	Wilson, E. H. & Co
Maywood F'dry & Mch. Co 39	Osborn Mfg. Co126	Safety Emery Wheel Co 57		
Merrell Mfg. Co 63	Ossawan Milis Co141			
Merriil Bros	Ostrander Fire Brick Co 85 Ostrander, W. R. & Co116			
Merriman, A. H	Otis Steel Co			Winter Bros
Mesta Machine Co	D	Samson Cordage Works 1	-	Wire Goods Co
Michigan Wire Cloth Co 13	P	Samuel, Frank 27		Wisconstn Machinery Co
Mietz, Aug 42	Palmer, I. R		TWDOT WITH CO	Wistor, L. & R. & Co
Milbradt, G. A. & Co108	Palmer Hardware Mfg. Co 124 Palmers & De Mooy Fdry. Co. 89	- WY		Withington & Cooley Mfg. Co. 12
Miles, F. S	Paradox Machinery Co 84	Scaffe, Wm. B. & Sons 20	Tanite Co	Wolff, R. H. & Co., Ltd
Miller, H. J	Pardee, C. Works 26	Scheeler's Sons 8	Taunton Locomotive Mfg. Co. 4:	Wood, Alan & Co
Miller & Van Winkle142	Park City Mfg. Co 70		Vennonne nami zun mun zu	Wood, Jno. Mfg. Co Wood, R. D. & Co
Millers Falls Co96&142	Parker, Chas. Co112 Passaic Rolling Mill Co 27			Wood Wm T. & Co
Millett Core Oven Co	Passaic Rolling Mill Co 65	Scott, Chas. Spring Co 8	Thomas & Lowe Machinery Co 8	Woodman, R. Mfg. & Sup.
Milton Mfg. Co	Patterson, F. L 85	Scott, Geo. M 65	Thompson, Hugh L S	Woodruff, O. D
Milwaukee Tack Co 14	Pawling & Harnischfeger 54	Scovill Mfg. Co	Thomson, W. H. & Co 2	Woodruff, Walter W. & Son-
Miner & Peck Mfg. Co 67	Paxson, J. W. Co	Scranton Forging Co128 Scranton & Co., The	Thomson Bros. & Co 9	Woods, T. B. Sons
Mitchell, W. B	Peck, Stow & Wilcox Co116 Pedrick & Ayer Co			Meh. Scraw Co
Monce, S. G		Seaman, Sleeth Co &	TILLEVIIIO FORKO CO	A Ollifore of the state of the
Mooney, W. M. & Co128	Pelouze Scale & Mfg. Co18	Seamless Metal Ware Co 9	2 Tod Wm. & CO 4	Wright & Colton Wife Co
Moore, C. P106	Penusylvania Engineering	Seavey Mfg. Co	Toomey, Frank	Wrightsville Hdw. Co
Moore, Franklin Co 16		0		Wurster, F. W. & Co Wyman & Gordon
Morgan Construction Co 11 Morgan Spring Co 5		Sellers, Wm. & Co 5		. v
		Seneca Falls Mfg. Co 6	8 Trethewey, Sam'l & Co., Ltd., 8	7 York, S. M. Co
		Sennett, Geo. B. Co 4		
Morley dros		Sessions Foundry Co 3	A Damen Venghn P Taylor Co 1	Young, W. C. Mrg. Co
Morley dros	Phila. Machine Screw Works. 2	Seward, M. & Son Co		Youngstown Iron & Store
Morley dros	Phila. Machine Screw Works. 2 Phila. Machine Tool Co 6	Seward, M. & Son Co		Roofing Co.
Morley dros	Phila. Machine Screw Works. 2 Phila. Machine Tool Co	Seward, M. & Son & Seyfert's Sons, L. F		Rooning Co
Morley dros	Phila. Machine Screw Works. 2 Phila. Machine Tool Co	Seward, M. & Son & Seyfert's Sons, L. F	Uehling, Steinbart & Co., Ltd. :	Rooning Co
Morley dros	Phila. Machine Screw Works. 2 Phila. Machine Tool Co	Seyfert's Sons, L. F. S Sharp, Klumph & Sisson. 9 9 Shaw, E. M. S Sherp, Klumph & Co. 13 Sherp, Klumph & Co. 13 Shepard, Sidney & Co. 14 Shimer, H. M. & Co.	Union Mfg. Co	Rooning Co
Morley dros	Phila. Machine Screw Works. 2 Phila. Machine Tool Co	Seyfert's Sons, L. F. S. Sharp, Klumph & Sisson. 9 Shaw, E. M. S. Sheffleld Car Co. 13 Shetton Co. 1 Shepard, Sidney & Co. 11 Shepard, Sidney & Co. 12 Shonberg, I.	Union Mfg. Co	Rooning Co
Morley dros	Phila. Machine Screw Works. 2 Phila. Machine Tool Co	Seyfert's Sons, L. F. S Sharp, Klumph & Sisson. 9 Shaw, E. M. S Shelfield Car Co. 13 Shelton Co. 11 Shimer, H. M. & Co. 11 Shimer, H. M. & Co. 11	Uphling, Steinbart & Co., Ltd.; Uphling, Steinbart & Co., Ltd.; Union Mfg. Co	Rooing Co

CLASSIFIED LIST OF ADVERTISERS.

Anetylene Burners state Line Talc Co., Chattanooga, Tenn.

Agricultural Implements
anticental Tool Cq, Frankfort, N. Y.
lowa Farming Tool Co., Ft. Madison, Ia.
withington & Cooley Mfg. Co., Jackson Mich.

son Mich.
Air Compressors
Fuird, U. Machinery Co., Pittsburgh, Pa.
Flayton Air Compressor Works, 25 Cortlandt St., New York.
Incersoll-sergeant Drill Co., 26 Cortlandt St., N.Y. andt St., N. Y.
Y. Air Compressor Co., 120 Liberty
St., N. Y.

st., N. Y. orwalk Iron Works, S. Norwalk, Ct. drick & Ayer Co., Philadelphia, Pa. and Drill Co., 128 Broadway, N. Y. digwick-Fisher Co., Chicago, Ill.

Air Moving Machinery hir Rifles Markham Air Rifle Co., Plymouth, Mich

Alloys Blackwell, G. G. Sons & Co., Ltd., Liverpool, England.

Aluminum Janney, Steinmetz & Co., Phila., Pa. Pittsburgh Reduction Co., Pittsburgh. Aluminum Tubing Ivins, Ellwood. 487 Broadway, N. Y.

Ammunition reters Cartridge Co., Cincinnati, O.

Annealing Boxes Warren City Boller Wks., Warren, O. Anti-Friction Metals-See Babbitt Metal. Anti-Rust.

Innter Chemical Co., Phila., Pa.

Anvils
Chicago House Wrecking Co., Chicago.
Hay-Budden Mfg. Co., Brooklyn, N. Y. Anvil and Vise (Combination)
Fulton Iron & Eng. Works, Detroit,

Apple Parers Goodell Co., Antrim, N. H. Reading Hardware Co., Reading, Pa.

Appraisers
American Appraisal Co., Milwaukee, Aprons, Leather Hull & Hoyt Co., Danbury, Conn.

Arbor Press eneca Falls Mfg. Co , Seneca Falls, N. Y

Arc Lamps
General Electric Co., Schenectady, N.Y. Auctioneers Dissell E. & Co., N. Y.

Auger Bits Bridgeport Gun Implement Co., \$13-Bridgeport Gun Implement Co., 513-315 Broadway, N. Y. Ford Stt Co., Holyoke, Mass. Jennings, Russell Mfg. Co., Deep River Conn. Jennings, C. E. Co., 101 Reade St., N. Y. Mayhew, H. H. Co., Shelburne Falls, Pugh, Joe. T., Phila., Pa. Snell Mfg. Co., Fiskdale, Mass.

Snell Mfg. Co., Fisidale, Mass.
Automatic Machines
Automatic Machines
Automatic Mch. Co., Bridgeport, Conn.
Cross & Speirs Machine . o., Waterbury. Conn.
Manville, E. J. Mch. Co., Waterbury, Ct.
Nison, A. H. Mch. Co., Bridgeport, Ct.
Park City Mfg. o., Bridgeport, Conn.
Spencer Automatic Mch. Screw Co.,
Hartford, Conn.

Automobile Parts
Livermore, Homer F., Boston, Mass. Awning Hooks
Wheeling Hinge Co., Wheeling, W. Va.

Awning Rods Garland Chain Co., Rankin, Pa.

Axe Wedges Woodruff, W. W. & Sons, Mt. Carmel, Ct

Babbitt Metal Hiertz, T. & Son, St. Louis, Mo. Magnolia Metal Co., 263-267 West St., N. V. M. V. Markle Lead Works, St. Louis, Mo. Reeves, Paul S. Philadelphia, Pa. Shimer, H. M. & Co., Phila., Pa. Shonberg, L. 172 Hudson St., N. Y. Syracuse Smelting Wks., Syracuse,

Bale Ties Griswold Wire Co., Braddock, Pa. Klimer Wire Mfg. Co., Chicago, Ill. Wilson, H. P. & H. F.,577 579 Tenth Ave., N. Y.

Buil Floats Sugatuck Mfg. Co., Naugatuck, Conn. Bank and Office Railing
Estey Wire Works Co., 65 Fulton St.,

Barb Wire and Fence Dillon-Griswold Wire Co., Sterling, Ill. Ear Iron Allentown Rolling Mill, Allentown, Pa. American Iron & Steel Mfg. Co., Le-

Allentown Holling Mill, Allentown, ra-American Iron & Steel Mfg. Co., Le-banon, Pa.

Muerican steel Hoop Co., Battery Park Building, N. Y.
Buiden Iron Co., Troy, N. Y.
Cham Ion Iron & Steel Co., Muskegon, Mich.
Consolidated Iron & Steel Co., Bristol, Pa. onsolidated from & Steel Co., Pittaburgh, Pa., ockhart Iron & Steel Co.,

Pa.

Lozan Iron & Steel Co., Burnham, Pa.

Nat'onal Steel Co., Bridgeport, O.

Republic Iron & Steel Co., Chicago, Ill.

Tennessee Coal, Iron & R. B. Co., Birmingham, A.a.

Virginia Iron, Coal & Coke Co., Bristol,

Va.—Tenn.

Bearings Hall Bearing Co., Boston, Mass. Beet Topping Knives
Atkins, E. C. & Co., Indianapolis, Ind. Bellews Scott, Geo. M., Chicago, Ill.

Bells and Gongs
Bevin Bros. Mfg. Co., East Hampton, Ct.
Gong Bell Mfg. Co., E. Hampton, Ct.
Hill, N. N. Brass Co., E. Hampton, Ct.
Mossberg, Frank Co., Attleboro Mass.
Starr Bros. Bell Co., Easthampton Ct.

Belt Dressing Dixon, Jos., Crucible Co., Jersey City,

Belt Hooks
Bristol Co., Waterbury, Conn
Talcott, W. O. Providence, R. I.

Belt Studs Hungerford, U. T. Brass & Copper Co., 121 Worth St., N. Y.

Belting
Alexander Bros., 412 N. 3d, Phila., Pa.
Ames Sword Co., Chicopee, Mass.
Boston Belting Co., Boston, Mass.
Machinists' Supply Co., Rochester, N.Y.
Peerless Rubber Mfg. Co., 16 warren St. Peerless Rubber Mfg. Co., 16 War New York, Shultz Belting Co., St. Louis, Mo. Belting. Chain Fuhl Malleable Co., Detroit, Mich.

Jeffrey Mfg. Columbus, O. Link-Belt Engineering Co., Phila., Pa. Bending Rolls
Baker, Jas. H. Mfg Co., Pittsburgh, Pa.
Hilles & Jones Co., Wilmington, Del.

Baker, Jas. H. Wfg. Co., Pittsburgh, Pa. Hilles & Jones Co., Wilmington, Del. New Doty Mfg. Co., Janesville, Wis. Niles Tool Works. Co., 136-138 Liberty St. N. Y.

Bicveles
Johnson, Iver, Arms & Cycle Works,
Fitchburg, Mass
Remington Arms Co., Illon, N. Y. Bicycle Bells -- See Bells and Gongs.

Bicycle Chains Bridgeport Chain Co., Bridgeport, Ct. Bicycle Lamms
Bridgeport Brass Co., Bridgeport, Conn.
Plume & Atwood Mfg. Co., 29 Murray
St., New York

St., New YOFK

Bicvcle Machinery

Bilss, E. W. Co., Brooklyn, N. Y.

Draper Mch. Tool Co., Worcester, Mass.
Garvin Mach. Co., Spring and Varick

Sts., New York.

Pratt & Whitney Co., Hartford, Conn.

Bicvcle Parts
Davis & Buxton Stamping Co., Worces Davis & Buxton Stamping Co., Worces-ter, Mass. Houghton & Buxton Mfg. Co., Worces-ter, Mass. ter, Mass. Pittsburgh Screw & Bolt Co, Pitts-burgh, Ps., Springfield Machine Screw Co., Spring-Springfield Machine Screw Co., S field, Mass. Standard Tool Co., Cleveland, O.

Standard Tool Co., Cleveland, O.

Bicycle Sundries
Bevin irros. Mfg. Co., E. Hampton, Mass.
Bridgeport Gun Implement Co., 313-315
Broadway, N. Y.
Hill, N. N. Brass Co., E. Hampton, Ct.
Hungerford, U. T., Brass & Copper Co.,
1:1 Worth St., N. Y.
Smith & Egge Mfg. Co., Bridgeport, Ct.
Supplee Hdw. Co., Phila., Pd.

Bicycle Wrenches Springfield Drop Forging Co., Springfield, Mass. Star Mfg. Co. Carpentersville, Ill.

Binder Twine
American Mfg. Co., 65 Wall St., N. Y. Bird Cages
Hendryx, Andrew B. Co., New Haven,

Bits
Conn. Valley Mfg. Co., Centerbrook, Ct.
Norton Mfg. Co., Chester, Conn.

Bit Braces Mason & Parker, Winchendon, Mass

Black Flate American Tin Plate Co., N. Y. Champion Iron & Steel Co., Muskegon, Mich.

Blast Forges.
Miner & Peck Mig. Co., New Haven, Ct Blocks, Tackle
Boston & Lockport Block Co., Boston,
Fulton fron & Eng. Wks., Detroit, Mich.
Lane Bros. Co., Poughkeepsie, N. Y.

Lane Bros. Co., Petroit, Mich. Blowers American Blower Co., Detroit, Mich. Asher, A., 109 Liberty St., N. Y. Bayley, Wm. & Sons Co., Milwaukee, Wis. Bayley, Wm. & Sons Co., Milwaukee, Wis.
Boston Blower Co., Hyde Park, Mass.
Buffalo Forge Co., Buffalo, N. Y.
Champion Blower & Forge Co., Lancaster, Pa.
Cornell, J. B. & J. M., 26th St. and fith Ave., New York City.
Exeter Machine Wks., Boston, Mass.
N. Y. Blower Co., Bucyrus, O.
Sturtevant, B. F. Co., Boston, Mass.
Wilbraham Baker Blower Co., Phila. Pa.
Boat Hardware
Hungerford, U. T. Brass & Copper Co.,
121 Worth St., N. Y.
Boiler Makers' Machinery
Prentice Bros., Worcester, Mass.
Boiler Plates

Prentice Bros., Worcester, Mass.

Boiler Plates

Lukens Iron & Steel Co., Coatesville,

Lukens Iron & Steel Co., Coatesvine, Pa. Seidel & Hastings Co., Wilmington, Del. Boiler Tubes
Beiler Tubes
Hungerford, U. T. Brass & Copper Co.
12! Worth St., N. Y.
National Tube Co., Pittsburgh, Pa.
Boilers. Steam
Babcock & Wilcox Co., 30 Cortiandt St.
Cahall Sales Dept., Pittsburgh, Pa.
Harrison Safety soller Wks., Phila., Pa.
Pollock, W. B. Co., Youngstown, O.
Watson, E. P., Elizabeth, N. J.
Wetherlil, Robt. & Co., Chester, Pa.
Wood, Jno. Myg. Co., Conshohocken,
Pa.

Pa.

Boit Cutters

Champers Bros., Philadelphia, Pa.
Sellers, Wm. & Co., Inc., Phila., Pa.

Boit and Nut Machinery

Acme Machinery Co., Cleveland, Ohio. Ajax Mfg. Co., Cleveland, Ohio. Detrick & Harvey Mch. Co., Baltimore, Md. Howard Iron Works, Buffalo, N. Y. National Machinery Co., Tiffin, Ohio.

American Iron & Steel Mfg. Co., Le banon, Pa.

American Iron & obcor and banon, Postor banon, Postor Vo., Providence, R. I. Blake & Johnson, Waterbury, Conn. Dunham Nut Co., Unforville, Conn. Franklin-Moore Co., Winsted, Conn. Hall's Sam'l Sons. 29 w. 10th St., N. Y. Haskell, Wm. H. Mfg. Co., Pawtucket,

Haskell, Wm. H. Mig.
R. I.
Ladd, W. C., Pristol, Conn.
Lanz, M. & Sone, Pittsburgh, Pa.
National Elastic Nut Co., Milwaukee,
Wis.
Pittsburgh Screw & Bolt Co., Pittsburgh, Pa.
burgh, Pa.
burgh, Pa.

burgh, Pa.
Port Chester Polt & Nut Co., Port
Chester, N. Y.
Rhode Island Tool Co., Providence, R. I.
Rockford Bolt Works, Rockford, Ill.
Russell, Burdsall & Ward, Port Chester,
N. V.

N. V. Shelton Co., Birmingham, Conn.

Books

Williams, David Company, 232-238 William Street N V

Bering and Turning Mills Sellers, Wm. & Co., Inc., Phila., Pa. Box Fixtures
Cary Mfg. Co., 19-21 Roosevelt St., N. Y.

Box Hasps and Hinges Cary Mfg. Co., 19-21 Roosevelt St., N. Y.

Box Straps and Corners Cary Mfg. Co., 19-21 Roosevel Boxes, Hdw. Shelf, &c. velt St., N. Y.

Green, A. H. & Co., 22 Park Place, Jones, Jesse, Paper Rox Co., Philis Moore, C. P., Ravenswood, W. Va. Brackets, Shelf

Atlas Mfg. Co., New Haven, Conn. Griffin Mfg. Co., Allegheny, Pa. Stowell Mfg. & Fdry. Co., Chicago, Ill.

Brass and Copper Ansonia Brass & Copper Co., 99 John St., N. Y. St., N. Y.
ridgeport Brass Co , Bridgeport, Ct.
avol, John & Sons, 100 John, N. Y.
ungerford, U. T., Brass & Copper Co.,
121 Worth St., N. Y.
lume & Atwood Mig. Co., 29 Murray
St., N. Y.

121 Worth St., N. Y. Plame & Atwood Mfg. Co., 29 Murray St., N. Y. Randolph-Clowes Co., Waterbury, Conn. Rutter, A. T., 256 Rooadway, N. Y. Scoville Mfg. Co., Waterbury, Conn. Shimer, H. W. & Co., Phila., Pa. Waterbury Brass Co., 60 Centre St., N. Y.

Brass and Copper Rods Hungerford, U. T., Brass & Copper Co., 121 Worth St., N. Y. Brass and Copper Wire

Hungerford, U. T., Brass & Copper Co., 121 Worth St., N. Y. Brass Butt Hinges

Hungerford, U. T., Brass & Copper Co. 121 Worth St., N. Y. Tiebout, W. & J., 118 Chambers.

Brass Butts Hungerford, U. T., Brass & Copper Co., 121 Worth St., N. Y.

Brass Founders Cramp, Wm. & Sons S. & E. B. Co., Phila-delphis, Pa Reeves, Paul S., Philadelphis, Pa. Ryan, J. J. & Co., Chicago, Ill.

Brass Goods Hungerford, U. T., Brass & Copper Co., 121 Worth St., N. Y.

Brass and Iron Jack Chains Hungerford, U. T., Brass & Copper Co., 121 Worth St., N. Y.

Breast Drills Miller Falls Co., 28 Warren St. N. Y.

Miller 4 Falls Co., 28 Warren St., N. Y. Bridge Bullders American Bridge Co., East Berlin, Ct. Boston Bridge Works, Boston, Mass. Easter Bridge & Structural Co. Worcester, Mass. Hinois Steel Co., Chicago, Il. New England Structural Co., Boston, Mass. Scaife, Wm. B. & Sons, Pittsburgh.

Bronze Ingots Syracuse Smelting Wks., Syracuse, N.Y. Bronze, Manganese Cramp, Wm. & Sons S. & E. B. Co., Phil-

adelphia. Pa Bronze, Tobin Ansonia Bronze & Copper Co., 99 John

Brooms and Brushes Osborn Mfg. Co., Cleveland, O.

Brush Holders
Ricknell Hardware Co., Janesville, Wis. Buffing Wheels Divine Bros. Co., Utica, N. Y.

Buggies Parry Mfg. Co., Indianapolis, Ind.

Builders' Hardware Keading Hardware Co., Reading, Pa. Stanley Works, New Britain, Conn. U. S. Steel Lock Co., Clinton, Iowa.

Bulldezers Williams, White & Co., Moline, Ill. Burners Acetylene State Line Tale Co., Chattanooga, Tenn Butchers' Saws Disston, Henry & Sons, Inc., Phila.Pa. Goodell-Pratt Co., Greenfield, Mass. Jennings, C. E. & Co., 101 Reade St., N. Y.

Butchers' Tools
Chatillon, John & Sons, 85-89 Cliff St.,
Goodell Co., Antrim, N. H.

Butts and Hinges—See Hinges.
Calibers and Dividers
Starrett, L. S. Co., Athol, Mass.
J. Stevens Arms & Tool Co., Chicopee
Falls, Mass.

Campaign Torches Shepard, Sidney & Co., Buffalo, N. Y. Can Openers Smith & Hemenway Co., 296 B'way, N. Y.

Car Building Machinery Wood-, S. A. Machine Co., So. Boston,

Car Springs Scott, Chas. Spring Co., Phila., Ps. Scott, Chas. Spring.

Carbide of Silicon

Casharundum Co., Niagara Falls, N. Y.

Carborundum Grains Carborundum Co. Niagara Falls, N. Y.

Carborundum Wheels
Carborundum Co., Niagara Falls, N. Y. Carringe Hardware
Atlas Bolt & Screw Co., Cleveland, O.
Baker, Jas. H. Mfg. Co., Pittsburgh, Pa.
Clapp, E. D. Mfg. Co., Auburn, N. Y.
Seranton Forging Co., Scranton, Pa.

Carriage and Wagon Springs Rowland, Wm. & Harvey, Phila., Pa

Cars. Atlas Bolt & Screw Co., Cleveland, O. Sheffield Car Co., Three Rivers, Mich

Cartridges Hungerford, U. T., Brass & Copper Co. Co., Cincinnati. O.

Carving Tools
Ruck, Chas., Millbury, Mass Case Hardening Material
American Carburizing Co., Jersey City.

Cash Recorders Hough Cash Recorder Co., Indian Or-Hough Cash Recorder Co., Indian Co-chard, Mass. Whiting Mrg. Co., Northboro, Mass. Castings, Atlas Metal Ferro-Carbon Castings Co., Phila., Pa.

Castings, Brass, Bronze and

instrings, Brass, Dronzo and Copper Copper Bridgeport Deoxidized Bronze & Metal Co., Bridgeport, Coun.
Chamman, J. R. & Co., Springfield, Mass. Clark, John W., Albany, N. Y.
Cramp, Wm. & Sons S. & E. B. Co., Philadelphia, Pa.
Rvan, J. J. & Co., Chicago, Ill.
West Side Foundry Co., Troy, N. Y.

Castings, Finished Franklin, H. H. Mfg. Co., Syracuse, N. Y.

Castings, Finished Frankiln, d. H. Mfg. Co., Syracuse, N. Y. Castings, Iron
Albany Foundry Co., Albany, N. Y. Allen, E. R., Corning, N. Y. Chen, C. R., Corning, M. Y. Chen, C. R., Chen, C. R., Chen, C. R., Chen, C. R., Cheney, S. & Son, Manllus, N. Y. Chishain & Moore - Ir. O. Cleveland, Clark, John W., Albany, N. Y. Codling Mfg Co., Bristol, Conn. Crane, Win. M. Co., Hal Broadway, N. Y. Diamond Drill & Mch. Co., Bridshoro, Pa. Du Bois Iron Works, Du Rois, Pa. Farrel Fdry & Mch. Co., Ansonia, Ct. Forest City Foundry & Mfg. Co., Cleveland, Ohio. Livermore, H. F., Boston, Mass. Lorain Foundry Co., Lorain, Ohio. New Albany Mfg. Co., New Albany

Palmers and De 2009, Cleveland, O., Phila. Roil & Mch. Co., Philadelphia, Pa. Sessions Foundry Co., Bristol, Conn. Spencer's L. Sons, Guilford, Conn. Standard Fdv. & Mcg. Co., Cleveland, O. U. S. Cast Iron Pipe & Foundry Co.,

V. S. Cast Iron Pipe & Foundry Co., Phila., Pa.
West Side Foundry Co., Troy, N. Y.
Wetherill, Robert & Co., Chester, Pa.
Wheeling Mold & Fdry, Co., Wheeling,
W. Va. Youngstown Fdry. & Mch. Co., Youngstown, O.

Castings, Maileable
Acme Steel and Mall. Iron Works, Buf-Jastings, and Mall. Iron Works, Buffalo, N. Y.
Arcade Mall. Iron Co., Worcester, Mass.
Columbus Mall. & Gray Iron Castings.
Co., Columbus, Ohio.
Hammer & Co., Branford, Conn.
Haven Malleable Castings Co., Cincinnatt, O.,
Jarecki Mfg. Co., Erle, Pa.
York Mfg. Co., York, Pa.

York Mfg. Co., York, Pa.

Castings. Steel!
Arcade Malicable Iron Co., Worcester,
Bethlehem Steel Co., So. Bethlehem, Pa.
Chester Steel Casting Co., Phila. Pa.
Chrome Steel Works, Brooklyn, N. Y.
Flagg, Stanley G. & Co., Phila. Pa.
Lima Steel Castings Co., Lima, O.
Livermore, Homer F., Boston, Mass.
Morris, P. Hollingsworth, Phila., Pa.
New England Steel Castings Co., Philadelphia, Pa. New England Steel Castings
delphia, Pa.
Otis Steel Co., Ltd., Cleveland, Ohio
Snaw, E. M. Providence, R. I.
Union Steel Casting Co., Pittsburgh, Pa.
Ceilings, Metal
Youngstown, O.
Youngstown, O.

Cements, iron Smooth On Mfg. Co., Jersey City, N. J. Chain Bradlee & Co., Philadelphia.

Bridgeport Chain Co., Bridgeport, Ct. Hungerford, U. T., Brass & Copper Co., 121 Worth St. N. Y. Jenkins Iron & Tool Co., Howard, Pa. Link-Selt Engineering Co., Philia., Pa. McKay Jas. & Co., Pittsburgh, Pa. Nicholson & Co., Pittsburgh, Pa. Oneida Community, Ltd., Nigara Falls Standard Chain Co., Pittsburgh, Pa.

Chain Plants
Turner, Vaughn & Taylor Co., Cuyahoga Falls O.

Chemicals Einer & Amend, New York.

Cherry Stoners.
Enterprise Mfg. Co., Philadelphia Pa.
Goodell Co., Antrim, N. H.

Glodel Chisels Hulbury, Mass. Huck Bros., Millbury, Mass. Buck, Chas., Millbury, Mass. Jennings, C. E. Co., 101 Reade St., N. Y. White, L. & I. J. Co., Buffalo, N. Y.

Christmas Tree Holders North Bros. Mfg. Co., Philadelphia, Pa.

North Bros. Mig. Co., Fallisdespais, S. Chucks
Cushman Chuck Co., Hartford, Conn.
Doebler Mig. Co., Middletown, Conn.
Goodell Prakt Co., Greenfield, Mass.
Horgson & Pettis Mig. Co., New Haven.
Holland Mig. Co., Erie, Ps.
Horton, E. & Bon Co., Windsor Locks, Ct.
Ideal Machine Works, Hartford, Conn.
Pratt Chuck Co., Frankfort, N. X.
Skinner Chuck Co., Frankfort, N. X.
Skinner Chuck Co., Frankfort, N. X.
Union Mig. Co., 168 Chambers, N. X.
Whiton, D. E. Mach. Co., New Britain, Conn.
Standard Tool Co., Cleveland, O.

Cider Mills Whitehurst, R. W. & Co., Norfolk, Va.

Circular Sawing Machines Kidder, R. E., Worcester, Mass. Clamps Besley, C. H. & Co., Chicago, Ill. Hall, Thos., Brooklyn, N. Y. Hammer & Co., Branford, Conn

Clipping Machines
Amer. Shearer Mfg. Co., Nashua, N. H.
Chicago Flexible Shaft Co., Chicago, Ili.
McCoy, Jos. F., Co., 26 Warren St., N. Y.
Wiebusch & Hilger, Ltd., 9-15 Murray
St. N. Y.

Clothes Dryers Hill Dryer Co., Worcester, Mass Clothes Line Hook Wilson, E. H. & Co., Allston, Mass.

Clothes Pins
Clark, J. R. D., Minneapolis, Minn.
U. S. Clothes Pin Co., Montpeller, Vt.

Coni Alabama Consolidated Coal & Iron Co., Alabama Consolioaco de Birmingham, Ala.
Sloss Sheffield Steel & Iron Co., Birmingham, Ala.
Washington Coal & Coke Co., Dawson, Pa. Wister, Francia, Philadelphia, Pa.

Conl Picks Jenkins Iron & Tool Co., Howard, Pa.

Coffee and Spice Mills Arcade Mig. Co., Freeport, Ill. Parker, Chas. Co., Meriden, Cor

Coke
Alabama Consolidated Coal & Iron Co. Anhama Consolidated Coal & Iron Co., Birmingham, Ala.
Bessemer Coke Co., Pittsburgh, Pa.
Cherry Valley Iron Co., Pittsburgh, Pa.
Dimmick, J. K. & Co., Phila., Pa.
Frick, H. C. Coke Co., Phila., Pa.
Houston, C. B. & Co., Philadeiphia, Pa.
Sloss Sheffield Steel & Ir.n Co., Birmingham Ala.
Tennessee Coal, Iron & R. R. Co., Birmingham, Ala.
Virginia Iron, Coal & Coke Co., Bristol, Va.—Tens.
Washington Coal & Coke Co., Dawson, Pa.

Pa. Wister, Francis, Philadelphia. Pa. Compressed Air Machinery Phila. Pneumatic Tool Co., Phila., Pa. Conductor Pipe Berger sros. Co., Philadelphia, Pa.

Conveying Machinery
Aultman Co., Canton, Ohlo.
Brown Hoisting aiachinery Co., Cleveland, Ohlo.
California Wire Works, San Francisco,
Du Hois Iron Works, Du B is, Pa.
Hunt, C. W. Co., W. New Brighton, N. Y.
Jeffrey Mrg. Co., Columbus, O.
Link-Belt Engineering Co., Phila., Pa.

Cooking Utensils Cleveland Stamping & Tool Co., Cleve-land, O.

Coping Saw Jones & Dommersnas, Chicago, Ill.

Copper Hendricks Bros., 49 Cliff, N. Y. Hungerforé, U. T., Brass & Copper Co., 121 Worth St., N. Y. United Metals Selling Co., 11 Brosdway, N. Y.

Copper Hammers Hungerford, U. T., Brass & Copper Co., 121 Worth St. N. Y.

Copper Rivets and Burrs Hungerford, U. T., Brass & Copper Co., 121 Worth St., N. Y.

Copper Tacks and Nails Hungerford, U. T., Brass & Copper Co., 121 Worth St., N. Y.

Cordage Macomber & Whyte Rope Co., Chicago Samson Cordage Works, Boston, Mass. Silver Lake Co., Boston, Mass.

Core Ovens
Millet Core Oven Co., Brightwood, Mass.
Cork Screws and Cork Pullers
Eric Specialty Co., Eric, Pa.

Corn Hooks Withington & Cooley Mfg. Co., Jackson, Mich.

Corn Huskers Wilcox Mfg. Co., Aurora, Ill.

Corrugated Iron and Steel
Garry Iron & Steel Rooming Co., Cleveland, O.
McCullough Iron Co., Wilmington, Del.
Scaffe, Wm. B. & Sons, Pittsburgh.

Cotter Pin Machines. Automatic Shuster, F. B. Co., New Haven, Conn.

Cotton Ties American Steel Hoop Co., Battery Park Building, N. Y.

Counting Machines

Durant, W. N. Milwaukee, Wis. Hart, R. A., Battle Creek, Mich.

Couplings, Compression Sennett, Geo. B. Co., Youngstown, O.

Oneida Community, Ltd., Niagara Falls, Cranes

Brown Hoisting Machinery Co., Cleve-land, Ohio. Chisholm & Moore 14 tand, Ohio.
Chisholm & Moore Mfg. Co., Cleveland, Cleveland Crane & Car Co., Cleveland, O. Niles Tool Works Co., 136-138 Liberty St., N. Y. Northern Engineering Works, Detroit,

Mich.
Pawling & Harnischfeger, Milwaukee,
Wis. Pneumatic Crane Co , Pittsburgh, Pa. Reading Crane & Hoist Wks., Reading, Pa. Ridgway, Craig & Son Co., Coatesville, Speidel, J. G., Reading, Pa.

Stoward, D. M. Mfg. Co., Chattanooga, Tenn.

Crucibles Dixon, Jos. Crucible Co., Jersey City, N. J.

Crayon

Cupolas Northern Engineering Works, Detroit. Paxson, J. W. Co., Philadelphia, Pa.

New York Stamping Co., Brooklyn, N. T.

Cutiery

Catturaugus Cutlery Co., Little Valley, Chatillon, John & Sons, 85 to 89 Cliff St.,

N. Y.
Dame, Stoddard & Co., Boston.
Goodell Co., Antrim, N. H.
Kimball, C. J. Co., Bennington, N.
Wiebusch & Hilger, Ltd., 9 to 15 Mt
St., N. Y.

Cutting Off Machines Hurlbut Rogers Mach. Co., So. Sudbury, Mass.

Cylinders. Air and Gas Harrisburg Pipe Bending Co., Harris-burg. Pa. Dampers

Logan & Strobridge Iron Co., New Brighton, Pa., Williams, A. C., Ravenna, O. Diamond Tools
Dickinson, Thos. L., 45 Vesey St., N. Y.

Dies

Jies

Adriance Mach. Works, Brooklyn, N. Y.
Bliss, E. W. Co., Brooklyn, N. Y.
Ferracute Mach. Co., Bridgeton, N. J.
Hay-Budden Mfg. Co., Brooklyn, N. Y.
Mossberg, Frank Co., Attleboro, Mass.
Richard Mfg. Co., Bloomsburg, Pa.
Wilson & Smith, Worcester, Mass.

Door Bells, -- See Bells and Gongs Door Checks and Springs

Bardsley, Jos., 147 151 Baxter St., N. Y. Ogden Mfg. Co., Newark N. J. Pullman Sash Balance Co., Rochester, N. Y.

Door Holders Caldwell Mfg. Co., Rochester, N. Y. Draught Springs Burditt & Williams, Boston, Mass.

Draw Benches

Richard Mfg. Co., Bloomsburg, Pa. Thompson, Hugh L., Waterbury, Co.

Prill Grinders

Heald, L. S. & Son, Barre, Mass.
Seller, Wm. & Co., inc., rhlla., Pa.
Washburn Shops of Worvester Polytechnic Inst., Worcester, Mass.

Drill Press Work Straight Mfg. Co., Jamestown, N. Y.

Drilling Machines prilling Machines
Barnes, P. F. Co., Rockford, Ill.
Barnes, W. F. & John Co., Rockford, Ill.
Baush Mch. Tool Co., Springfield, Mass,
Bickford Drill & Tool Co., Cin., Ohio.
Bullard Machine Tool Co., Bridgeport,

Ct. Burnham, Geo. Co., Worcester, Mass. Champion blower & Forge Co., Lanca ter, ra. ter, ra. Chedmati Mch. Tool Co., Cincinnati, o. Dallett, Thos. H. & Co., Philadelphia. D'Amour & Littledale Mch. Co., 131 Worth St., N. Y. Davis, W. P., Machine Co., Rochester,

N. T.
Detrick & Harvey Mch. Co., Baltimore,
Md.
Poedick & Holloway Mach Tool Co,
incinnati, O.

Foedick & Holloway Mach Tool Co, inclinati, O.
inclinati, O.
inclinati, O.
Harrington, E. Son & Co., Phila., Pa.
Hill, Clarke & Co., Boston, Mass.
Hoefer Mig. Co., Freeport, Ill.
Niles Tool Works to., 136-138 Liberty
St., N. Y.
Prendice Bros., Worcester, Mass.
Qu'nt, A. D., Hartford, Conn.
Shusker, E. B. Co., New Haven, Conn.
Sibley & Ware, So., Bend., Ind.
Sigourney Tool Co., Hartford, Conn.
Silver Mig. Co., Saleng O.
Slate Dwight Machine Co., Hartford,
Com. Estimate Co., Hartford,
Co., Estimate Co., Ha

ow Flexible Shaft Co., Phila., Pa. ley & Russell Mfg. Co., Greenfield, Wiley & Russell Mig. Co., Gi Mass. York, S. M. Co., Cleveland, O.

Drilling Machines, Automatic Gould & Ebernardt, Newark, N. J.

Drive Chains

Locke Steel Belt Co., Bridgeport, Conn

Drop Forgings

Belden Machine Co., New Haven, Conn.
Bellings & Spencer Co., Hartford, Conn.
Chicago Drop Forging & Fdry. Co.,
Kensington, Ill.
Clapp, E. D. Mfg. Co., Auburn, N. Y.
Consolidated Kailway Electric Lighting & Equipment Co., 100 Broadway,
N. Y.
Lindianapolis Drop Forging Co., Indianapolis, Ind.
Kevstone Drop Forge Co., Philadelphia,
Kilborn & Bishop Co., New Haven, Conn.
R. I. Tool Co., Providence, R. I.
Scranton Forging Co., Scranton, Pa.
Seward, M. & Son Co., New Haven, C.
Springfield Drop Forging Co., Springfield Mass.
Strleby & Foote Co., Newark, N. J.

Sewaru,
Sewaru,
Springfield Drop Forging
field Mass.
Strieby & Foote Co., Newark, N. J.
Transue & Williams Co., Alliance, O.,
Williams, J. H. & Co., Brooklyn, N. Y.
Wyman & Gordon, Worcester Mass.

Drop Hammers

Billings & Spencer Co., Hartford, Copp. Merrill Bros., Brooklyn, N. Y. Williams, White & Co., Moline, Ill.

Drop Presses

Manville, E. J. Mch., Co., Waterbury, Miner & Peck Mfg. Co., New Haven, Mossberg & Granville Mfg. Co., Pro-dence, R. I. Vulcan Iron Works, Chicago, Ill.

Dumb Waiters Energy Elevator Co., Philadelphia, Pa. Speidel. J. G., Reading, Pa. Storm Mfg. Co., Newark, N. J. Variety Machine Co., Warsaw, N. Y.

Dump Cars Atlas Bolt & Screw Co., Cleveland, O.

Dynames and Meters, Electric Jynamos and Motors, Electric Eddy Electric Mfg. Co., Windsor, Con. General Electric Co., Schenectady, N. Y. Naw England Motor Co., Lowell, Mass. Sturtevant. B. F. Co., Boston, Mass Westinchouse Elec. & Mfg. Co., Pitts-burgh, Pa.

Eave Troughs Kanneberg Rfg. Co., Canton, O.

Eave Trough Hangers Berger Bros. Co., Philadelphia, Pa. Oatman Bros., Mediua, O.

Buck, Chas., Millbury, Mass. Buck Bros. Millbury, Mass. Ferro-Carbon Castings Co., Phila. Pa. White, L. & I. J. Co., Buffalo, N. Y.

Egg Beaters

Lyon, Nelson, Albany, N. Y. Standard Co., Boston, Mass.

Egg Opener Hartigan, W. R., Collinsville, Ct.

Electric Bells and Supplies Ostrander, W. R. & Co., 204 Fulton St. Electric Lighting and Power Ap-

paratus

Eddy Electric Mfg. Co., Windsor, Conn.
General Electric Co., Schenectady, N. Y.

Electrical Apparatus

Wes'inghouse Elec. & Mfg. Co., Pittsburgh, Pa.

ourgh, Pa.

Elevators. Makers of
Eastern Machinery Co., New Haven, Ct.
Energy Elevator Co., Philadelphia, Pa.
Link-Belt Engineering Co. Phila, Pa.
Morse, Williams & Co., Phila, Pa.
Ringway, Craig & Son Co., Coatesville,
Pa.

Pa. Speidel, J. G., Reading, Pa. Variety Machine Co., Warsaw, N. Y.

Elevator Buckets

Clark, W. J. & Co., Salem, O. Cleveland Elevator Bucket Co., Cleve land, O.

Elevator Enciosures and Cabs Ludlow Saylor Wire Co., St. Louis, Mo. Emery

Tanite Co., Stroudsburg, Pa.

Emery Wheels

Emery Wheels

American Emery Wheel Works, Providence, R. I.

Best, L., 45 Vesey St., N. Y.

Bridgepor's Safety Emery Wheel Co.,

Bridgerort, 'onn.

Buff ato Emery Wheel Co., Buffalo, N. Y.

Nazel, John, 'hila., 'a.

Northampton Emery Wheel Co., Leeds,

Mass.

Norton Emery Wheel Co., Worcester,

Mass.

Norton Emery Wheel Co., Worcester, Mass. Safety Emery Wheel Co., Springfield, O. Springfield Mfg. Co., Bridgeport, Conn. Sterling Emery Wheel Co., Tfffin, O. Tanite Co., Stroudsburg, Pa. Vitrlied Emery Wheel Co., Westfield, Mass.

Emery Wheel Dresser

Chicago Screw Co., Chicago, Ill. Dickinson. Thos. L., 45 Vesey St., N. Y. Enameled Ware

Bellaire Stamping Co., Harvey, Ill. Engineers and Contractors

Aiken, Henry, Pittsburgh, Pa. Erikaon, Edw. E., Pittsburg, Pa. Filer & Stowell Co., Milwaukee, Wir Forter-Miller Engineering Co., Pi

Forter-Miller Engineering Co., Filiburgh, Pa.
Heyl & Patterson, Pittsburgh, Pa.
Huber, S. V. Co., Pittsburgh, Pa.
Kennedy, Julian, Pittsburgh, Pa.
Kennedy, Walter, Pittsburgh, Pa.
Lamond, David, Pittsburgh, Pa.
Laughlin, Alex & Co., Pittsburgh, Pa.

McClure, G. W. Son & Co., Pittsburgh Morgan Construction Co., Worcester Morgan Construction Co., Worcester Mass. Penna. Engineering Wks., New Castle Penna.

Penna.
Riter-Conley Mfg. Co. Pittsburgh, Pa.
Smythe. S. K. Co., Inc., Pittsburgh, Pa.
Swindell, W. & Bros., Pittsburgh, Pa.
Thompson, Hugh L., Waterbury, Ct.
Wellman Seaver Engineering Co., Clave
land. O.

Fli

Fle

Fl

FI

Gas. Mietz, Aug., 128-138 Mott St., N. Y. Northern Engineering Works, Detroit Northern Engineering Works, Detroit, Mich Gasoline.
Charter Gas Engine Co., Sterling, Ill. Stover Engine Works, Freeport Ill. Weber Gas & Gasoline Engine Co., Kansas City, Mo.
Watkins, F. M., Cincinnati, O. Kerosen, 128-128 Mott St., N. T. Steam.

Mietz, Aug., 126-138 Mou St., N. Y.
Steam.
Allis, E. P. Co., Milwankee, Wis.
Boston Blower Co., Hyde Park, Mass.
Butfalo Forge Co., Buffalo, N. Y.
Filer & Stowell Co., Milwankee, Wis.
Newport News Shipbuilding & Dry Dock
Co., I Broadway, N. Y.
Sennet Geo. B. Co., Youngstown, O.
Southwark Fdry. & Mcb. Co., Philadelphis, Pa.
Furtevant. B. F. Co., Boston, Mass.
Tod., William & Co., Youngstown, O.
Totten & Hogg Iron & Steel Fdry. Co.,
Pittaburgh, Pa.
Wetherill, Robt. & Co., Chester, Pa.

Fingines. Marine
Lake (ity Engineering Co., Eric, Pa.

Engines. Second Hand Everson, B. M., Pittsburgh, Pa.

Engravers

Mugford. A., Hartford, Conn.

Expanding Mandrels LeCount, Wm. G., 80. Norwalk, Conn

Expansion Bolts Church, Isaac Toledo, O. Evane, F. H., Brooklyn, N. Y. McCahe Hanger Mfg. Co. 530-543 W. 224 Ct., N. Y. Newhall Henry B. Co., N. Y. Seaman D. C. & Co., Philadelphia, Pa. Steward & Lomaine Mfg. Co., Phila., Pa

Farriers' Tools. Champion Tool Co., Ltd., Conneaut Lake, Pa. Heller Bros. & Co., Newark, N. J.

Faucets

McKenna Bros. Brass Co., Ltd., Pitts-burg, Pa.

Faucets, Wooden Boston & Lockport Block Co., Boston. Sommer's, John, Son, Newark, N. J.

Feed Cutters

Silver Mfg. Co., Salem. O.

Feed Water Heaters and Purl-

Harrisburg Pipe Bending Co., Harrisburg Pipe Bending Co., Harrisburg Pa.

Harrison Safety Boller Works, Philadelphia, Pa.

Kelly, B. F. & Son, M. Liberty St., N. Y.

National Pipe Bending Co., New Haven.

Patterson, F. L., 136 Liberty St., N. Y.

Taunton Locomotive Mig. Co., Taunton,

Mass.

Webster, Warren & Co., Camden, N. J.

Whitlock Coil Pipe Co., Hartford, Ct.

Whitlock Coil Pipe Co., Hartford, Ct.

Fencing, Iron and Wire
Adam, W. J., Joilet, Ill.
American Steel & Wire Co., Chicago, Ill.
Barnum, E. T., Detroit, Mich.
Berthe, A., Jersey City, N. J.,
Clinton Wire Cloth Co., Clinton, Mass.
DeKaib Fence Co., DeKaib, Ill.
Dwiggins Wire Fence Co., Anderson,
Ind.

Ind.

Ellia & Halfenbarger, Indianapolis, Ind.

Ellia & Halfenbarger, Indianapolis, Ind.

Frost Wire Fence Co., Cleveland, O.

Gilbert & Bennett Mfg. Co., 44 Cliff et.

Hartman Mfg. Co., 399 Broadway, N. Y.

Klimer Wire Mfg. Co., Chicago, Ill.

Kokomo Fence Mch. Co., Kokomo, Ind.

Ludlow Saylor Wire Co., St. Louis. Mo.

Ornamental Iron & Wire Co., Chauanooga, Tenn noogs, Tenn
Rossman Woven Wire Fence Co., Rossman, N. Y.
Stewart Iron Works, Cincinnati, Ohio
Up-to-date Mfg. Co., Terre Haute, Ind.

Ferre-Uhromium
Willson Aluminum Co., 90 Cedar Street

Files and Rasps

Manufacturers of Arcade File Works, Anderson, Ind. Barnett, G. & H. Co., 41 & 48 Richmond Phila. Disston, Henry & Sons, Inc., Phila., Pa-Heller Eros (O., Newark, N. J., McCafrey File Co., Philadelphia. Nicholson File Co., Providence, R. I., Stokes Bros. Mfg. Co., Freehold, N. J.

Filters Scafe, Wm. B. & Sons, Pittsburg, Pa. Fine Tool Work
Straight Mfg. Co., Jamestown, N. Y.

Finished Castings Franklin, H. H. Mfg Co., Syracuse

Fire Brick Gre Brick
Borgner, Cyrus, Philadelphia, Pa.
Gardner Bros., Cumberland, Md.
Haws, W. H. Fire Brick Co., Mt. Union.
Maurer, H. & Son, 420 E. 23d, N. Y.
Ostrander Fire Brick Co., Troy, N. Y.
Presbrey Fire Brick Co., Taunton, Mass.
Valentine, M. D. & Bro. Co., Woodbridge.

Fire Extinguishers International Sprinkler Co., Phila., Pa

Fishing Tackle ame, Stoddard & Co., Boston, Mass. Flanged Fittings
Latrobe Steel Co., Phila., Pa.

Flexible Metallic Tubing sharp, Klumph & Sisson Co., Chicago. Flexible Shafting

hicago Flexible Shaft Co., Chicago Stow Flexible Shaft Co., Phila., Pa. Stow Mfg. Co., Binghamton, N. Y. Flint and Emery Paper

Baeder, Adamson & Co., Phila, Pa. Floor and Ceiling Plates odling Mfg. Co., Bristol, Conn.

Flue Cleaners

Jackson Flue Scraper Co., Jackson,
Jarecki Mfg. Co., Erie, Pa. Fly Killers

Bigelow, J. F., Worcester, Mass toot Power Emery Wheels Buffalo Emery Wheel Co., Buffalo, N.Y. Foot Rests Star Heel Plate Co., Newark, N. J.

Forges, Portable, &c. Bradley Co., Syracuse N. Y. Champion Blower & Forge Co. Lancas-Champion Blower & Forge Co. Las ter. Pa. Sturtevant, B. F. Co., Boston, Mass.

Surievant, B. F. Co., 19850n, Mass. Forgings, Iron and Steel Baker, Jas. H. Mfg. Co., Pittsburgh, Pa. Rethiehem Steel Co. S. Bethiehem, Pa. Eastern Forkel Co., Phila., Park Budden Mfg. Co., Brooklyn. N. Y. Offa Steel Co., Lid., Cleveland, Ohio., Pittsburgh Shear, Knife & Machine Co., Pittsburgh, Pa.
Titusville Forke Co., Titusville, Pa.

Forks, Hay and Manure Continental Tool Co., Frankfort, N. Y. lowa Farming Tool Co., Ft. M dison, Ia Withington & Cooley Mfg. Co., Jackson

Withington & Cooley Mfg. Co., Ja Foundry Facings Ohermayer, S. Co., Cincinnati, O.

Foundry Lamps
Forest City Fdy. & Mfg. Co., Cleveland.
Paxson, J. W. Co., Phila., Pa

Foundry Supplies
Gilmour, J., Bennett Building, N. Y.
Obermayer, S. Co., Cincinnati, Ohio.
Osborn Mfg. Co., Cleveland, O.
Paxson, J. W. Co., Phila., Pa.

Friction Clutches Eastern Machinery Co., New Haven, Ct. Hess, Snyder & Co., Massillon, O

Furnaces, Oil, Gas and Ceal Rockwell Engineering Co., 26 Cortlandt St., N. Y.

Ensign Bickford & Co., Simsbury, Ct.

Crosby Steam Gage & Valve Co., Boston. Galvanized Ware

Keen & Hagerty Mfg. Co., Baltimore.

Galvanizing
Blackman & King, 801 Greenwich St., Empire Pipe Bending & Supply Co., Brooklyn, N. Y.

Galvanizing Process . S. Electro Galvanizing Co., 848 Broadway, N. Y.

Garden Rakes Cronk Hanger Co., Elmira. N. Y. Jenkins Iron & Tool Co., Howard, Pa.

Garden Tools Withington & Cooley Mfg. Co., Jackson

Gas Composimeter
Uchling, Steinbart & Co., Ltd., Carletadt, N. J.

Gas Compressors
Norwalk Iron Works Co., So. Norwalk, Gas Furnaces

Am. Gas Furnace Co., 23 John St., N. Y. Chicago Flexible Shaft Co., Chicago, Ill. Gaskets, 1ron Smooth On Mfg. Co., Jersey City, N. J

Gas Producers Duff Patents Co., Allegheny, Pa. Smythe, S. R. Co., Inc., Pittsburgh, Pa. Swindell, W. & Bro., Pittsburgh, Pa.

Gauges, Rolling Mill Haines Gauge Co., Philudelphia, Pa.

Gears icars
Boston Gear Works, Boston, Mass,
Gleason Tool Co., Rochester, N. Y.
Morse, Williams & Co., Phila., Pa.
Nuttall, R. D. Co., Pittaburgh, Pa.
Poole, Robt. Son & Co., Baltimore, Md.

Gears, Rawhide Horsburgh & Scott, Cleveland, Ohio.

Gear Cutters Becker Brainard Milling Machine Co.. Hyde Park, Mass. Gould & Eberhardt, Newark, N. J. Whiton, D. E. Mch. Co., New London,

Generators, Flectric Westinghouse Elec. & Mig. Co., Pitts-burgh, Pa

Gimlets No ton Mfg. Co. Chester, Conn.

Solon arg. Co. Chester, Conn.

Glass Cutters

Barrett, W. L., Bristol, Conn.

Bultman, F. H. & Co., Cleveland, O.

Monce, S. G., Unionville, Conn.

Smith & Hemenway Co., 296 Broadway.

Glass Cutting Boards
Lufkin Rule Co., Saginaw, Mich. Glue Baeder, Adamson & Co., Phila., Pa. Golf Goods Bridge oort Gun Implement Co., 812 Broadway, N. Y.

Grass Hooks Wallingford Mfg. Co., Wallingford, Vt. Grates, Rocking Scnnett. Geo. B. Co., Youngstown, O.

Grease, Axle w Flake Axle Grease Co., Boston.

Grinding and Polishing Mchs. American Emery Wheel Works, Providence, R. I.
Barnes, W. F. & John Co., Rockford, Ill.
Besly, Chas. H. & Co., Chicavo, Ill
Brown & Sharpe Mfg. Co., Providence,
Builders fron Foundry, Providence, R. I.
Cincinnati Milling Mach. Co., Cincinnati, Cinc

Uncinnati Milling Mach. Co., Cin-cinnati, O. Landis Tool Co., Waynesboro, Pa. Northampton Emery Wheel Co., Leeds, Mass. Norton Emery Wheel Co., Worcester, Mass.

Mass. afety Emery Wheel Co., Springfield, O. pringfield Mfg. Co., Bridgeport, Conn. anite Co., Stroudsburg, Pa. Iniversal Mach Co., Providence, R. I. Grindstones

Cleveland Stone Co., Cleveland, O.

Grubbing Machine
New Century Mfg. Co., 48 E. 8th St.,
N. Y.

Guns Harrington & Richardson Arms Co., Worce-ter, Mass Worcester, Mass Johnson, Iver Arms & Cycle Works, Fitchburg, Mass. Marlin Fire Arms Co., New Haven, Ct. Remington Arms Co., 315 Broadway, New York

New York

Hack Saws

Disston, Henry & Sons, Inc., Phila., Pa.
Goodell-Pratt Co., Greenfield, Mass.

Springfield Machine Screw Co., Springfield, Mass.

Starrett, L. S. Co., Athol, Mass.

Hammers Heller Bros. Co., Newark N. J. Logan & Strobridge Iron Co., New Brighton. Pa.

Hammecks
Palmer, I. E., Middletown, Conn.
Bicknell Hdw. Co., Janesville, Wis. Hand Milling Machines
Costilo. J. E. Machine Wks., Brooklyn,

Hand Screws Rliss, R. Mfg. Co., Pawtucket, R. I.

Handle Machinery Defiance Machine Works, Defiance, O. Handles Piqua Handle & Mfg. Co , Piqua, O.

Hangers, Barn Door Myers, F. E. & Bro., Ashland, O.

Myers, F. E. & Bro., Ashland, O.

Hangers. Deer
Coourn Prolley Track Mfg. Co., Holyoke, Mass.
Cronk Hanger Co., Elmira, N. Y.
Lane Bros., Poughkeepsle, V. Y.
Lawrence Bros., Sterling, Ill.
Louden Machinery Co., Fairfield, Iowa.
McCabe Hanger Mfg. Co., 531-543 W. 22d
Street, N. Y.
McKinney Mfg. Co., Allecheny, Pa.
Ney Mfg. Co., Canton, Ohlo.
Stowell Mfg. Co., Canton, Chile
waukee, Wis.
Wilcox Mfg. Co., Aurora, Ill.
Hangers., Nhafting.

Hangers, Shafting Ball Bearing Co., Hoston, Mass. Dodge Mfg. Co., Mishawaka. Ind.

Hardware Comm'n Merchants Graham, Jno. H. & Co., 113 Chambers Graham, Jno. H. & Co., 113 Chambers St., N. Y. Hungerford, U. T., Brass & Copper Co., 121 Worth St., N. Y.

Hardware Jobbers

Hardware Manufacturers
Arcade Mfg. Co., Freeport, Ill.
Central Hardware Co., Phila.
Logan & Strobridge Iron Co., New
Brighton, Pa. Brighton, Pa.
Millers Falls Co., 28 Warren St., N. Y.
Ney Mfg. Co. Canton, Ohio.
Nicol & Co., Chicago, Ill. Ney Mig. Co., Canton, Ohio. Nicol & Co., Chicago, Ill. Parker, Chas., Co., Meriden, Conn. Peck, Stow & Wilcox Co., 27 Murray St., N.Y.

N Y.
Shepard, Sidney & Co., Buffalo, N. Y.
Stanley Works, New Britain, Conn.
Unlon Mfg. Co., 103 Chambers St. N. Y.
Van Wagoner & Williams Hdw. Co.,
Cleveland, O.
Wrightsville Hdw. Co., Wrightsville, Pa

Hardware Mfrs. Agents Graham, John H. & Co., 113 Chambers Graham, John H. & Co., 113 Chambers St., N. Y. Wiebusch & Hilger, Ltd., 9-13 Murray St., N Y.

Hardware *helving Warren, J. D. Mfg. Co., Chicago, Ill.

Warren, J. D. Mfg. Ch., Chicago, Ill.

Hardware Specialties
Acme Shear Co., Bridgeport, Conn.
Berger Bros. Co., Philadelphia, Pa.
Enterprise Mfg. Co., of Pa., Phila., Pa.
Graham, John H. & Co., 115 Chambers
X. Kibourse Mfg. Co., 5 Fair Haven, Vt.
Pleuger & Henger Mfg. Co., St. Louis,
Scranton & Co., The. New Haven, Ct.
Smith & Egge Mfg. Co., Bridgeport, Ct.

Harnesa Snaps Covert Mfg. Co., West Troy, N. Y. Covert's Saddlery Wks., Farmer, N. Y. Imperial Bit & Snap Co., Racine, Wis.

Hasps and Staples McKinney Mfg. Co., Allegheny, Pa Harchets
Jensins Iron & Tool Co., Howard, Pa.

Hay Knives Clark & Parsons Co., E. Wilton, Me. Indiana Edge Tool Co., Gas city, Ind. Ney Mfg. Co., Canton, Ohlo.

Hay Tools
Louden Machinery Co., Fairfield, lows.
Myers, F. E. & Bro., Ashland, O.
Ney Mfg. Co., Canton, O.

Heating and Ventilating Appa-

merican Blower Co., Detroit, Mich. ayley, Wm. & Sons Co., Milwaukee, Wis. Boston Blower Co., Hyde Park, Mass. Buffalo Forge Co., Buffalo, N. Y. Sturtevant, B. F. Co., Boston, Mass.

Star Heel Plate Co., Newark, N. J.

Hinges
Jenkins from & Tool Co., Howard, Pa.
Lawrence Bros., Sterling, Ill.
McKinney Mg. Co., Allegheny, Pa.
Stanley Works, New Britain, Conn.
Tiebout, W. & J., 118 Chambers St., N.Y. Hitching Posts Hartman Mfg. Co., 309 Broadway, N. Y.

Hoes, Garden, Planters', &c. Continental Tool Co., Frankfort, N. Iowa Farming Tool Co., Fort Madiso Jenkins Iron & Tool Co., Howard, Pa

Hoists, Air Pedrick & Ayer Co., Philadelphia, Pa. Pidoway, Craig & Son Co., Coatesville,

Hoiste, Chain and Rope Box, Alfred & Co., Philadelphia, Pa ox, Aired & Co., Philadelphia, Pa-cksfein, C. G., 249 Centre St., N. Y. ulton Iron & Engine Works, Detroit, Mich. Mich. Harrington, E., Son & Co., Phila., Pa. McCoy, Jos. F. & Co., 26 Warren St. Reading Crane & Hoist Works, Readin

Pa. peldel, J. G., Reading, Pa. Hoisting Machines Eastern Machinery Co., New Haven, Ct Lidgerwood Mfg. Co., 96 Liberty St.

Hollow Mill Geometric Drill Co., Westville, Conn.

Geometric Drill Co., Westerne, Conn.
Hollow Ware
Avery Stamping Co., Cleveland, Ohio.
Cleveland Stamping & Tool Co., Cleveland, O.
New York Stamping Co., Brocklyn, N.Y.
Rogers, Jno. M. Hoat-Gauge & Drill
Works. Gloucester, City, N. J.

Horns Shepard, Stdney & Co., Buffalo, N. Y. Horse Nails
Capewell Horse Nail Co., Hartford, Ct,
Mooney, W. M. & Co., Ausable Chasm,
N. Y.

N. Y. atlonal Horse Nall Co., Vergennes, Vt. utnam Nall Co., Neponset, Boston, Tlebusch & Hilger, Ltd., 9-15 Murray St., N. Y.

St., N. Y.

Horse and Mule Shoes

American Steel & Wire Co., Chicago, Ill.

Burden Iron Co., Troy, N. Y.

Hollow Grip Horse Shoe Co., hicago,

Phœnix Horse Shoe Co., Poughkeepsie,

Rhode Island Perkins Horse Shoe Co.,

Providence, R. I.

Hose
Boston Belting Co., Roston, Mass.
Peerless Rubber Mfg Co. 16 Warren
Street, New York.

Hose Couplings Clark, W. J. & Co., Salem, Ohio.

Hose Coupling, Air Pedrick & Ayer Co., Philadelphia, Pa. Hose Washers Canfield, H. O., Bridgeport, Conn

House Furnishing Specialties Llovd Mfg. Co.. Mianeapolis, Minn. Williams, A. C. Ravenna, O.

Hydraulic Jacks
Dudgeon, Richard, 24 Columbia St., N.Y.
Henderer. A. L. Sons, Wilmington, 'el
Watson-Stillman Co., 294 E. 43d St., N.Y.

Hydraulic Machinery Watson-Stillman Co., 204 E. 43 St., N. Y. Hydraulic Presses Cornell, J. B. & J. M., 28th St. and 11th Ave., N. Y.

Hydraulic Tools Watson-Stillman Co., 204 E. 43d St., N.Y. Wood, R. D. & Co., Phila., Pa.

lce Cream Freezers.
North Bros. Mfg. Co., Philadelphia, Pa.
White Mountain Freezer Co., Nashua,
N. H.

Ice Making Machinery York Mfg. Co., York. Pa. lce Picks Erie Specialty Co., Erie, Pa.

Lee Shredders
Enterprise Mfg. Co., Philadelphia, Pa.
Eric Specialty Co., Eric, Pa.

ice Tools Gerlach, Peter & Co., Cleveland, O. Williams, A. C., Ravenna, O. Wood, Wm. T. & Co., Arlington, Mass.

Injectors JenkinsBros., New York.

Hartford Steam Boiler Inspection and Insurance Co., Hartford, Conn.

Iron and Steel, Swedish Harvey, Arthur C. Co., Boston, Mass. Lilleaberg, N., 150 Broadway, N. Y. Milne, A. & Co., 1 Broadway, N. Y. Potts. Horace T. & Co. Phila., Pa. Fron Commission Brokers

Cabeen & Co., Phila., Pa.
Cotton, Barclay W. & Co., Phila., Pa.
Cox, Justice, Jr. & Co., Ltd., Phila., Pa.
Etting, Edw. J., Philadelphia.
Etting, Edw. J., Philadelphia.
Law, Ernest & Co., Philadelphia.
Law, Ernest & Co., Philadelphia.
Levis, Henry & Co., Philadelphia.
Levis, Henry & Co., Philadelphia.
Wister, L. & R. & Co., Philadelphia.
Wister, L. & R. & Co., Philadelphia.
Comp. Manufacturers.

Wister, L. & E. & Co., Phila, Pa.

Fron. Manufacturers
Newkirk, J. B. & Co., Philadelphia, Pa.
Republic Iron & Steel Co., Chicago. Ili

Merchants.
Bole, Ross & Co., Pittsburgh, Pa.
Cotton, Barclay W. & Co., Phila
Cunlifie, R. M., Phila., Pa.
Law, Ernest & Co., Phila, Pa.
McInnes, C. E. & Co., Phila, Pa.
Ogden & Wallace, 577-533 Greenwich
St., N. Y.

Pierson & Co., 29 Broadway, N. Y. Potts, Horace T. & Co., Phila., Pa. Thomson, W. H. & Co., Phila., Pa. Wallace, Wm. H. & Co., 66 B' way, N. Y. Wheeler, Mittin & Co., Phila., Pa. Wilson, E. H. & Co., Phila.

Importers
Wheelock-Lovejoy & Co., New York and

Iron. Galvanized Sheet-See Sheets,

Iron. Sheet-See Sheets, Iron and Steel, Iron Ore Nicoll, B. & Co., 59-61 Wall St., N. Y. Pilling & Crane, Phila., Pa. Pullman, J. Wesley, Phila., Pa.

Ironwork, Ornamental

Adam, W. J., Jolet, Ill.
Barnum, E. T., Detroit, Mich.
Berthe, A., Jersey City, N. J.
Ornamental Iron & Wire Co., Chattanooga, Tenn.
Van Dern Iron Wks. Co., Cleveland, O.

Job Lots, Hardware Chicago House Wrecking Co., Chicago,

Joist Hanger National Iron & Wire Co., Cleveland, O. Van Dorn Iron Wks. Co., Cleveland, O.

Kegs Bell, Edwin & Sons Co., Youngstown, O

Key Rings
Snow, L. T., New Haven, Conn.

Keys, Machine
Morton Mfg. Co., Muskegon Heights,
Mich.

eys. Split and Riveted

Hollinger Fence Co., Greenville, O. Mer on Mfg. Co., Muskegon Heights, Mich.

Knife and Tool Grinder nion Mfg. Co., Buffalo, N. Y.

Knives Kimball, C. J. Co., Bennington, N. H.

Laboratory Outfits
Eimer & Amend New York. Lamps, Gasoline

Nolte Brass Co., Springfield, O. Lasts and Last Stands

Kupferle, Jno. C., St. Louis, Mo. Pleuger & Henger Mfg. Co., St. Louis, Mo. Stowell Mfg. & Foundry Co., So. Mil-waukee, Wis.

Lathe Dogs LeCount, Wm. G., So. Norwalk, Conn.

American Tool Works Co., Cincinnati, Ohio. ker-Chard Mch. Tool Co., Cincinnati. B

Ohio. Barnes, B. F. & Co., Rockford, Ill. Brown & Sharpe Mfg. Co., Providence, I. ard Mach. Tool Co., Bridgeport, Ct. s, W. P. Machine Co., Rochester,

N. Y.
Draper Mch. Tool Co., Worcester, Mass.
Fish, H. C. Mch. Wrks., Worcester, Mass.
Harrington, E. Son & Co., Phila., Pa.
Johnson, Israel H., Jr., & Co., Phila., Pa.
Jones & Lamson Mch. Co., Springfield,
Vt.

Vt.
Lodge & Shipley Mch. Tol Co. Clacinati, O.
McCabe, J. J. 40 by St., N. Y.
New Haven Mfg. Co., New Haven, Ct.
Pond Machine Tool Co., 'lainfield, IlJ
Potter & Johnson Co., Pawtucket, R. L
Pratt & Whitney Co., Hartford, Conn.
Prentice Bros. Worcester, Mass.
Schumacher & Boye, Cinclinati, O.
Seneca Falls Mfg. Co., Seneca Falls, N. V.
Young, W. C. Mfg. Co., Worcester, Mass.

Lathe Tools
Hill Tool Co. Anderson, Ind.

Lathing, Wire

Clinton Wire Cloth Co., Clinton, Mass. N. J. Wire Cloth Co., Trenton, N. J. Wright & Colton Wire Cloth Co., Wor-cester Mass.

Lawn Mowers Blair Mfg Co., Springfield, Mass. Supplee Hardware Co., Phila., Pa. Lawn Mower Sharpeners

Wilcox Mfg. Co., Aurora, Ill. Lawn Sprinklers

Kupferle, Jno. C., St. Louis, Mo. McGowan, John H. Co., Chuchnatt, Pleuger & Henger Mfg. Co., St. Le Mo. Lemon Squeezers

Hagen & Reid, Troy, N. Y. Williams A. C., Ravenna, O. Link Belting
Buhl Malleable Co., Detroit, Mich

Locks and Knobs Central Hardware Co., Phila., Pa. teading Hdw. Co., Reading, Pa. U. S. Steel Lock Co., Clinton, Iowa

Locomotives. Everson, B. M., Pittsburgh, Pa. Logging Tools Peter & Co., Cleveland, Ohio.

Lubricants Dixon, Jos., Crucible Co., Jersey City Snow Flake Axle Grease Co., Boston.

Lumbering Tools Rros., Saginaw, Mich. Lunch Boxes . Seavey Mfg. Co., Boston, Mass.

Machinery Acme Machinery Co., Cleveland, Ohio.
Aiax Mfg. Co., Cleveland, Ohio. American Tool Wks. Co., Cincinnatt, O., Balrd, U. Machinery Co., Pittsburgh, Pa. Barnes, W. F. & John Co. Rockford, III. Baueh Mch. Tool Co., Springfield, Mass. Recker Brainard Milling Mach. Co. Hyde Park, Mass. Hills E. W. Co., Brooklyn, N. X. Howler, Geo. H., Cleveland, O. Briggs, Marvin, 12 Broadway, N. Y. Brown & Sharpe Mfg. Co., Providence, Bullard Mch. Tool Ci., Bridgeport, Ct. Carlin Machinery & Supply Co., Alle gheny, Pa. Carlin's Sons Thos., Allegheny, Pa. Carlin's Sons Thos., Allegheny, Pa. Cuncinnatt Milling Mach Co., Cla. O. Incinnatt Hilling Mach Co., Cla. O. orneil, J. B. & J. M., 26th St. and lith Ave., New York City.
Pavis, W. P. Machine Co., Rochester, Dawson, A. L. & Co., Chicago, III.

N. Y. Dawson, A. L. & Co., Chicago, III. Dawson & Goodwin Chicago, III. Detrick & Harvey Mcn. Co., Baltimore, Md.

Diamond Drill & Mch. Co., Birdsboro,
Pa.

Pa. Doun, J. B. & Co., Chicago, III. Praper Mach. Tool Co. Worcester Mass. Du Hois From orks, Du Hois, Pa. Carrel F'dry & Mch. Co., Ansonia, Cond. erracute Machine Co., Erigeton, N. J. Fish, H. C. Machine Works, Worcester,

Fish, H. C. Machine Works, Worcester, Mass. Garvin Machine Co., Spring and Varick Sta. N. Y. 1919; Co., 49 John St., N. Y. General Supply Co., 49 John St., N. Y. Geometric Drill Co., Westwille Conn. Crry, 160L. J., 254 E. 182d St., N. Y. Hanney Machine Co., Torrington, Conn. 1111, Henry F. Hoston, Mass. Hill, Clarke & Co., Boston, Mass. Lionson, Israel H., Jr., & Co., Phila. Johnson, Wm. C. & Sons Mch. Co., St. Louis, Mo.

Junious Maintenance o., hicago, Ill.
Johnson, Vin. C. & Sons Mch. Co., St.
Louis Mo.
Kaiser, A. V. & Co., Phila., Pa.
Loge & Shipley Mch. Tool Co., Cin., O.
Loud, S. T., Goston, Maas.
McCabe, J. J., 14 Dey Street, N. Y.
McDowell & Co., 'fitsbur. h. Pa
Manville, E. J. Mach. Co., Waterbury, Ct.
Marshall & Huschart Mchry. Co., Chlcago, Ill.
Missberg, Frank Co., Attlehoro, Mass.
National Machine y Co., Tiffin. Ohio.
New Hoven Mfg. Co., Sanesville, Wis.
New Hoven Mfg. Co., New Haven, Com.
New York Machinery Depot, 178 Broadway, New York.
Nilson, A. H. Mch. Co., Bridgeport. Ct.
Paradox Machinery Co., bliesgo, Ih.

Niles Tool Works Co., so Liberty
Nt., N.Y.
Nilson, A. H. Mch. Co., Bridgeport Ct.
Paradox Machinery Co., hicago, fli.
Pennsylvania Machine Co., Phila., Pa.
Phila Machine Tool Co., Phila., Pa.
Pittsburgh Mfg. Co. Tittsburgh, Pa.
Pont Machine Tool Co., Plainteld, N.J.
Poote, Robt. & Son Co., Pastimore, Md.
Potter & Johnston Co., Pawtucket, R. L.
Jouiterer & Co., Phila., Pa.
Pratt & Whitney Co., Hartford, Comm.
I rent'se Bros., Worcester, Mass.
Prantiss Tool & Supply Co., 115 Liberty
NE., N. Z. Williams Chasson.

Prautiss Tool & Supply Co., 115 Liberty
Et., N. Y. Station & Supply Co., 115 Liberty
Et., N. Y. Station & Chicago, 111.
Reade, Wm. A. & Co., Cleveland, O. Seyfert's Sons L. F., Philadelphia, Pa. Sigourney Tool Co., Hartford, Conn. & L. niard Machusery & Fullment Co.
Cleveland, O. Thomas & Lowe Machinery Co., Providence, R. L.
Toomey, Frank, Philadelphia, Pa.
Waterbury Farrel Foundry & Mch. Co.,
Waterbury Farrel Foundry & Mch. Co.,
Waterbury Com.
Wetherfill Robert & Co. Chester, Pa.
Wices Sos, Pittsburgh, Pa.
Windsor Machine Co., Windsor, V&
Wisconsin auchinery Co., Milwaukee,
Wis.

Wormer, C. C. Mehv. Co., Detroit, Mich York, S. M. Co., Cleveland, O.

Machinery, Wood Working Defiance Machine Wks., Defiance, O. Fay, J. A. & Egan Co., Cincinnati, O. Machinery Springs Scott, Chas. Spring Co., Phila, Pa.

Machinery Builders Chapman, J. B. & Co., Springfield, Mass.

Machine Needles
Excelsior Needle Co., Torrington, Ct.
Machine Screws—See Screws. Ma-

Machine Screw Work Spencer Automatic Mch. Screw Co.

Machine Tools-See Machinery Machine Work

Machine Wreuches
Hartford Conn.

Machinists' Scales
Machinists' Scales
Searcett, L. S. Co., Athol, Mass.

Starrett, L. S. Co., Athol, Mass.
Machinists* Tools and Supplies
Billings & spencer Co., Hartford, Cor
General Supply Co., 40 John St., N. Y.
Koysone Mig. O., Buffalo, N. Y.
King, J. M. & Co., Waterford, N. Y.

Magnetic Separators

Manganese Bronze Hungerford, U. T. Brass & Copper Co., Manufacturing Properties Hurrisburg F'dry & Mch. Wks., Harris-

Herrisburg e ary burg, Pa.
hurg, Pa.
Hillman, J. H. & Co., Pittsburgh, Pa.
Manufacturing Sites
Chicago, Milwaukee & St. Paul R. R.,

Chicago, Ill. Chicago, Ill. ouisville & Nashville R. R., Louisville, Louisville & Nashville R. R., Louisville, Ky. Southern Railway Co., Washington, D. C.

D.C.
Mensuring Machines
Rogers, Jno. M. Boat, Gauge & Drill
Wks., Gloucester City, N. J.
Ment Choppers
Brown, has D., 160 Duane St., N. Y.
Enterorise Mig. Co. of Pa., Phila., Pa.
Peck, Stow & Wilcox Co., 27 Murray St.,
New York.

Streeter, N. R. & Co., Rochester, N. Y. Woodruff, O. D., Pottstown, Pa.

Metal Brokers can Metal Co., 52 Broadway, N. Y.

Hendricks Bros., 49 Cliff St., N. Y.
Hofeller, Theo. & Co., Buffalo, N. Y.
Hungerford, U. T. Brass & Copper Co.,
121 Worth St., N. Y.
Rutter, A. T., 256 Broadway, N. Y.
U. ited Metals Selling Co., 11 Broadway,
N. Y.

Metal Goods Manufacturers traight Mfg Co., Jamestown, N. Y.

Metal Polish Hoffman, Geo. W., Indianapolis, Ind.

Metal Spinning Goodwin & Kintz Co., Winsted, Conn.

Metal Wheels

Metal Wheels
klectric Wheel Co., Quincy, Ill.
Milling Machines
Acatas Co., Dubuque, Iowa.
Becker-Brainard Milling Machine Co.,
Hyde Park, Mass.
Brown & Sharpe Mfg. Co., Providence.
Carter & Hake-Mach. Co., Winsted, Cl.
Cincinn-it Milling Mach. Co., In., O.
Fox Machine Co., Grand Rapids, Mich.
Garvin Machine Co., Spring and Variek
Sta., N. Y.
Niles Fool Works Co., 186-185 Liberty
St., N. Y.
Shuster, F. B. Co., New Haven, Conn.
Thurston Mfg. Co., Providence, R. L.
Minels Fool Knives

Mincing Kulves
Bishop, Geo. H. & Co., Cincinnati, O.
Palmer Hdw. Mfg. Co., Troy, N. Y. Mining Machinery
Allis, E. P. Co., Milwaukee, Wis.
Rand Drill Co., 125 Broadway, N. Y.

Mining Screens
Harrington & King Perforating Co., Harrington & King Perforating Co., Chicago, Ill. Howara & Morse, 45 Fulton St., N. Y. Michigan Wire Cloth Co., Detroit, Mich.

Miter Boxes
Thomson Bros. & Co., Lowell, Mass

Molding Machines
Adams o., Dubuque, Iowa.
Maywood Fdry. & Mch. Co., Chicago.

Motor Fans Hungerford, U. T. Brass & Copper Co., 121 Worth St., N. Y.

Motors, Air Stow Flexible Shaft Co., Phila., Pa Motors, Electric-See Dynamos and Motors, Electric.

Nail Clippers Cook, H. C. Co., Ansonia, Conn.

Nail Machinery Pittsburgh Mfg Co., Pittsburgh, Pa.

Nail Pullers
Hagen & Reid, Troy, N. Y.
Scrauton & Co., The, New Haven, Conn.
Smith & Hemenway Co., 296 Broadway,
N. Y.
Snow, L. T., New Haven, Conn.

Name Plates, Machinery Murdock Parlor Grate Co., Boston, Mass

Natural Gas Pumps Norwalk Iroz Wks. Co., So. Norwalk, Ct. Nickel Platers' Supplies Eddy Electric Mfg. Co., Windsor, Conn.

Nickeloid American Nickeloid Co., Peru, Ill.

Norway Shapes Rowland, William & Harvey, Frank-ford, Philadelphia.

Nnts-See Bolts Nuis, Self-Locking Nuis, Self-Locking National Elastic Nut Co., Milwankee,

Nut Machines Nut Machines Nut Co., Unionville, Conn. Oil Burning Appliances
Rockwell, Engineering Co., 26 Cortlandt

Oil Extractor Reed & Curtis Mch. Screw Co., Worces-

Oil Henters-See Oil Stoves.

Oil Stones Pike Mfg. Co., Pike Station, N. H.

Oil Stoves-(See Stoves Oil, Vapor and Oilers Bay State Stamping Co., Worcester,

Bay State Stamping, Mass.
Mass.
Gem Mfg. Co., Pittaburgh, Pa.
Hammer & Co., Branford, Conn.
Stoutenburg Mfg. Co., Kelthaburg, Ill.
Wilmot & Hobbs Mfg. Co., Bridgeport

Oilless Bearings North American Metalline Co., Long Island City, N. Y.

Ore Breakers Aultman Co., Canton, O. Cresson, Geo. V. Co., Phila., Pa

Ores Blair, Reed F. Co., Pittsburgh, Pa. Samuel, Frank, Philadelphia, Pa. Wister, Francis, Philadelphia, Pa.

Ovens, Portable Blodgett, G. S. Co., Burlington, Vt.

Ox Shoes Scranton Forging Co., Scranton, Pa. Woodruff, Walter W. & Sons, Mt. Car-

Packing
Boston Belting Co., boston, Masa,
Morrison, Robert, St. Louis, Mo.
Peerless Rubber Mfg. Co., 16 Warren
Street, N. Y.

Packing, Iron Smooth On Mfg. Co., Jersey City, N. J.

Padlocks Graham, John H. & Co., 113 Chambers Street, New York. Paints
Dixon, Jos. Cracible Co., Jersey City.
Standard Paint Co., 77-79 John St., N. Y.

Pants Stretcher
Covert Mfg. Co., West Troy, N. Y.

Patent Solicitors

Goepel & Raegener, 200 Broadway, Howson & Howson, Philadelphia and Washington. Washington. Stocking, E. B., Washington, D. C.

Patterns
Balkwill Pattern Wks., Cleveland, O. Norwalk 'attern & Mfg. Co., So. Norwalk, Conn.

Pattern Letters

Rutler, A. G., 103 Beckman St., N. Y.
St. Louis Electrotype Foundry, St. Louis
Perforated Metal

Clinton Wire Cloth Co., Clinton, Mass. Harrington & King Perforating Co., Chi-cago, Ill. Hungerford, U. T. Brass & Copper Co., 121 Worth St., N. Y.

Phospher Bronze

Hungerford, U. T. Brass & Copper Co., 121 Worth St., N. Y. Phosphor Bronze Smelting Co., Limited, l'hiladelphia.

Phosphor Tin

Crescent Phosphorized Metal Co., Phila-delphia, Ps. Halk & Naumann, 518 Pearl St., N. Y. Syracuse Smelting w ks., Syracuse, N.Y.

Picture Wire
Ossawan Mills Co., Norwich, Conn.
Pig Casting Machines l & Patterson, Pittsburgh, Pa.

Pig Iron Pig Iren
Alabama Consolidated Coal & Iron Co.,
Birmingham. Ala.
Baird, C. R. & Co., Phila, Pa.
Cherry Valley Iron Co., Pittsburgh, Pa.
Dimmick, J. K. & Co., Phila., Pa.
Hickman, Williams & Co., Chicago, Ill.
Houston, C. B. & Co., Philadelphia, Pa.
Nicoli, B. & To., 93-6 Wall St. N. Y.
Republic Iron & Steel Co. Chicago.
Samuel, Frank, Philadelphia, Pa.
Sloss-Sheffield Steel & Iron Co., Birmingham. A a.
Snyder, W. P. & Co., Pittsburgh, Pa.
Superior Charcoal Iron Co., Grand Rapids, Mich.
Tennes-ee Coal, Iron & R. R. Co., Birmingham, A la.
Virginia Iron, Coal and Coke Co., Bristol, Va.—Tenn.
Pig Iron Analysis

Pig Iron Analysis Church, S. R., San Francisco, Cal.

Pig Iron Storage

Am. Pig Iron Storage Warrant Co., 4 Wall St. N. Y.

Pile Drivers

Edson Mfg. Co., Boston, Mass. Vulcan Iron Works, Chicago, Ill. Pincers.

Washington Tool Co., Owatonna, Wis. Pipe, Bent

Harrisburg Pipe Bending Co., Harrisburg. Pa. National Pipe Bending Co., New Haven, Conn. Conn.
National Tube Co., Pittsburgh, Pa.
Whitlock Coil Pipe Co., Hartford, Ct.

Pipe Coupling
Williams, J. H. & Co., Brooklyn, N. Y.

Pipe Cutting and Threading Machines chines

Bigmail & Keeler Mfg. Co., Edwardsville, Ill.
Curtis & Curtis, Bridgeport, Conn.
Jarecki Mfg. Co., Erle, Pa.
Merrill Mfg. Co., Toledo, O.
Saunders' Sons, D., Yonkers, N. Y.

Pipe Grips Prentiss Vise Co., 44 Barclay, N. Y.

Pipes, Fittings, &c. Jarecki Mfg. Co., Erle, Pa. MeNab & Harlin Mfg. Co., N. Y.

Pipe, Riveted Steel Follock, W. B. Co., Youngstown, O. Scaife, Wm. B. & Sons, Pittsburgh, Warren City Boller Works, Warren, O.

Warren City Boiler Works, Warren, O. Pipe, Water and Gas
Millar, C. & Son Co., Utlea, N. Y.
National Tube Co., Pittsburgh, Pa.
Red Jacket Mfg. Co., Davenport, Iowa.
U. S. Cast Iron Pipe & Foundry Co.,
Phila. Pa. Phila., Pa. Wood, R. D. & Co., Philadelphia, Pa.

Piston Reds. Tobin Bronze
Ansonia Brass & Copper Co. 99 John
St., N. Y.

Planes Stanley Rule & Level Co., N. Y.

Planers
Amer. Tool Works Co., Cincinnati, O.
Baird, U. Machinery Co., Pittsburgh, Pa.
Cincinnati Pianer Co., Cincinnati, Ohlo.
Detrick & Harvey Mch. Co., Baltimore.
Draper Mch. Tool Co., Worcester, Mass.
Pond Machine Tool Co., Plainfield, N.J.
Whitcomb Mfg. Co., Worcester, Mass.
Wilson, W. A., Rochester, N. Y.

Plated Ware International Silver Co., Meriden, Ct. Pintes, Fron and Steel
Jones & Laughlins, Ltd., Pitssburgh, Pa.
Lukens fron & Steel Co., Coatesville, Pa.
Singer, Nimick & Co., Inc., Pittsburgh,
Fa.
Wood, Alan Co., Philadelphia.

Plate Iron Work Scalfe, Wm. B. & Sons, Pittsburgh.

Plyers
Bridgeport Mfg. Co., Bridgeport, Conn
Cronk Hanger Co., Elmira. N. Y.
Utica Drop Forge & Toel Co., Utica,
N. Y.

Pneumatic Tools
Phila. Pneumatic Tool Co., Phila., Pa.

Pocket Knives
Cattaraugus Cutlery Co., Little Valley,
N. Y.

Polishing Wheels os. Co., Utica, N. Y.

Portable Track Atlas Bolt & Screw Co., Cleveland, O.

Poultry Fencing
DeKalb Fence Co., DeKalb, IIL

Poultry Nettings
Gilbert & Bennett Mfg. Co., 44 Cliff St.,
N. Y.
N. J. Wire Cloth Co., Trenton, N. J.
Tyler, W. S. Co., Cleveland, O.
Wright & Colton Wire Cloth Co., Worcester, Mass

K

Power Hack Saws

efer Mfg. Co., Freeport, In.

Power Hammers Beaudry & Co., Boston, Mass. Bradley Co., Syracuse, N., Dienell & Elsenhardt, Philadelphia. Dupont Mfg. Co., St. Johnsbury, Va. Kidder, R. E., Worcester, Mass. Long & Allstatter Co., Hamilton, Ohio. Miner & Pecis Mfg. Co., New Haven, C. Scranton & Co., The, New Haven, Conn.

Power Transmitting Mach'y Cresson, Geo. V. Co., Phila., Pa. Dodge Mfg. Co., Mishawaka, Ind. Norwalk Iron Wks. Co., So. Norwalk, Ct.

Pressed Metal Work Avery Stamping Co., Cleveland, Ohio.

Presses. Power Presses. Power

Adriance Mach. Works, Brooklyn, N. Y.

Gliss, E. W. Co., Brooklyn, N. Y.

Cross & Speira Mch. Co., Waterbury, Ct.

Bridgeton, N. J.

Hibbard, W. H., Brooklyn, N. Y.

Hilles & Jones Co., Wilmington, Del.

Leffler, Chas. & Co., Brooklyn, N. Y.

Manville. E. J. Mch. Co., Waterbury, Ct.

Merriman, A. H., Meriden, Conn

Mossberg & Granville Mfg. Co., Providence, R.

Niagara Machine & Tool Wks., Buffalo.

Persins Machine Co., Boston, Mass.

Phila. Machine Tool Co., Phila., Pa.

Rudolphi & Krummel, Chicago, Ill.

Shuster, F. B. Co. New Haven, Conn.

Projectiles

lonal Tube Co., Pittsburgh, Pa.

"ulleys
Amer. Pulley Co., Phila., Pa.
Dodge Mfg. Co., Mishawaka, Ind.
Eastern Machinery Co., New Haven, Ct.
Evans, G. F., 1905ton, Mass.
Hess. Sny. er & Co., Massillon, O.,
Jones & Laughlins Ltd., Pittsburgh, Pa.
Sagmaw Mfg. Co., Sagrinsw, Mich.
Woods, T. B. Sons, Chambersburg, Pa.

Pump Chains

Garland chain Co., Rankin Station, Pa

Cook, A. D., Lawrenceburg, Ind.
Filer & Stowell Co., Milwankee, Wia.
Ingersoil-Sergeant Drill Co., & Cortlands St., N. Y.
Lake City Engineering Co., Erle, Pa.
McGowan, J. H. & Co., Cincinnati, O.
Southwark Fdry. & Mch. Co., Philadeiphia, Pa.

Pumps 'ump8
Athol Pump Co., Athol, Mass,
Barnes Mfg. Co., Mansfield, O.
Deming Co., Salem, O.,
Flitt & Walling Co., Kendallville, Ind.
Hess, Snyder & Co., Massfilon, O.
Pumphryes Mfg. Co., Marsfield, O.
Myers, F. E. & Bro., Ashland, Ohlo.
Red Jacket Mfg. Co., Davenport, In.
St. Joseph Pump & Mfg. Co., St., Joseph,
Mo.

Wilder, S. & Co. Holliston, Mass.

Punches, Conductors' Voodman, R. Mfg. & Supply Co., Boston, Mass.

Punches and Shears, Hand and

Power

Bethlehem Foundry & Machine Co., So. Bethlehem, Pa.
Bicknell Hdw. Co., Ja eaville, Wis.
Bitss, E. W. Co., Brooklyn. N. Y.
Hilles & Jones Co., Wilmington, Del.
Long & Allstatter Co., Hamilton, Ohio
Mersick C. S. & Co., New Haven, Conn.
New Doty Mfg. Co., Janesville, Wis.
Williams, White & Co., Moline, Ill.

Punching and Shearing Harrington & King Perforating Co., Chicago, Ill.

Push Carts

Syracuse Chilled Plow Co., Syracuse.

Pyrometers

Brown, Edward, Phila., Pa. Uebling, Steinbart & Co., Ltd., Carl-stadt, N. J.

Railways, Industrial Hunt, C. W. Co., West New Brighton, N. Y.

Rat and Mouse Traps
Burditt & Williams, Boston, Mass.

Ratchet Drills Keystone Mfg. Co., Buffalo, N. Y.

Razors Suck Bros., Millbury, Mass.

Razer Henes Pike Mig. Co., Pike Station, N. H. Reamers

Morse Twist Drill & Mch. Co., New Bedford Mass

Recording Gauges Bristol Co., Waterbury, Conn. Uehling, Steinbart & Co., Ltd., Caristate, N.J. Reels Hendryx, A. B. Co., New Haven, Conn. Refrigerating Machinery York Mfg Co., York, Pa.

Refrigerators
Maine Mfg. Co., Nashua, N. H.

Registers
Seavey Mfv. Co., Boston, Mass.
Stowell Mfg. & Foundry Co., So. Milwaukee, Wis.

waukee, Wis.
Reinvang Rails
Block- ollak Iron Co., Chicago, Ill.
Donaldson & Newton, Phila., Pa.
Isaac-Joseph Iron Co., Cincinnati, O.
May & Spaiding, Atlanta, Ga.
Steel - all Supply Co., 130 B'way, N. Y.

Reloading Tools

Bridgeport Gun Implement Co., 813-315 eldgeport Gun Implement Co., 118-315 Broadway, N. Y. ungerford, U. T., Brass & Copper Co., 121 Worth St., N. Y. leai Mfg. Co., New Haven, Conn.

Mepairing Sets, Family
Mitchell, W. B. Chicago, Ill.
Star Heel Plate Co., Newark, N. J.
Repair Outfirs, Farmers'
Imperial Bit & Snap Co., Racine, Wis.

Revolution Counters Pitkin, A. B. Machry. Co., Providence Tabor Mfg. Co., Elizabeth, N. J

Revolvers
Harrington & Richardson Arms Co.,
Worcester, Mass.
Johnson, Iver, Arms & Cycle Works,
Fitchburg, Mass.

Rifles
Mariin Fire Arms Co., New Haven, Ct.,
Remington Arms Co., 315 B'way, N. Y.
Stevens Arms & Tool Co., Chicopes
Fails, Mass.

Ring Rollers Shuster, F. B. Co., New Haven, Conn. Riveters Phila. Pneumatic Tool Co., Phila., Pa.

Rivets American Iron & Steel Mfg. Co., Le American Iron & Steel Mrg. Co., Le-banou, Fe.
American Serew Co., Providence, R. L.
Blake & Johnson, Waterbury, Conn.
Burden Iron Co., Troy, N. Y.
Clark & Cowles, Plaintville, Conn.
Cobb & Drew, Plymouth, Mass
Garland thain o, Rankin Station, Pa.
Hungerford, U. T., Brass & Copper Co.,
121 Worth St., N. Y.
Lanz, M. & Son. Ptisburgh, Ps.
Melnnes, C. E. & Co., Phila., Ps.
Plymouth Mills, Plymouth, Mass
Rockford Bolt Works, Rockford, Ill.
Townsend C. G. & E. P., New Brighton
Pa.

Pa.

Riveting Machines

Rathlehem Foundry & Mch. Co., So. Bethlehem Foundry & Mcn. Co., S Bethlehem, Pa. Shuster. F. B. Co., New Haven, Conn.

Rod Mill Machinery Bradwick Machine & Mfg. Co., Brad-Braudeck Machine & Mfg. Co., Brad-dock, Pa Morgan Construction Co., Worcester, Mass.

Mass.
Roll Turning Tools
believey.Sam'l & Co.,Ltd.,Pittsburgh

Roller Bearings
Hall Bearing Co., Boston, Mass,
Mossberg & Granville Mfg. Co.. Providence, E. I.

Mossberg & Grandeller & General Rolling Mill Machinery
Booth, The Loyd Co., Youngstown, O.
Fverson, B. M., Pittsburgh, Pa
Farrell Fdry. & Mch. Co., Ansonia, Ct.
Frank-Kneeland Mach. Co., Pittsburgh
Frank-Kneeland Machinery
Frank-Kneeland Mach. Co., Pittsburgh
Frank-Kneeland Machinery
Frank-K Mesta Machine Co., Pittsburgh. Morgan Construction Co., Worcester,

sberg & Granville Mfg. Co., Provi-L. Engineering Wks., New Castle, renns. otten & Hogg Iron & Steel Fdry. Co., Pittsburgh, Pa.

Ritsburgh, Pa.

Rells, Chilled, Sand and Steel
Sn. enguam from Fdry, Derby, ConBooth, The Lloyd Co., Youngstown, O.
Farrel F'dry & Mach. Co., Ansonia, Ct.
Frank-Kneeland Mach. Co., Pittsburgh, Fa.
Lorain Foundry Co., Lorain, Ohio.
Mesta Machine Co., Pittsburgh, Pa.
Phila. Koli & Mch. Co., Pittsburgh, Pa.
Seam un, Sleeth Co., Pittsburgh, Pa.
Totten & Hogg fronand Steel Fdry. Co.,
Pittsburgh, Pa.
Youngstown Foundry & Machine Co.,
Youngstown Fou

Koofing and Siding
As half needy koofing Co., 136 Water A. halt ready Roofing Co., 130 water St., N. Y. Garry Iron & Steel Roofing Co., Cleve-land, O. Kanneberg Roofing Co., Canton, O. Scaffe, Wm. B. & Sons. Pitt-burgh Youngstown Iron & Steel Roofing Co., Youngstown, O.

Youngstown Iron & Steel Roooning Co., Youngstown, O.
Rope and Cordage.
American Mg. Co., 55 Wall St., N. Y.
Rope and Web 1:00ds
Covert Mg. Co., West Troy, N. Y.
Rope Shield
Tronsides Co., Columbus, Ohio.
Rope Transmission and Hoisting
American Mg. Co., 65 Wall St., N. Y.
California Wire Works, San Francisco,
Hunt, C. W. Co., West New Brighton,
N. Y.
Leschen, A. & Sona Rope Co.

N. Y. Leschen, A. & Sons, Rope Co., St. Louis, Woods T. B. cons Chambersburg, Pa. Rubber Goods
Boston Belting Co., Boston, Mass.
Canfield, H. O. Bridgeport, Conn.
Peerless Rubber Mfg. Co., 16 Warren Street, N. Y.
Rubber Screen

Rubber Scrap Hofeller, Theo. & Co., Buffalo, N. Y. Hofener, and Ruies Lufkin Rule Co. Saginaw, Mich. Stanley Rule & Level Co., 29 Chambers

Sad iron Mfg. Co, Phila., Pa. Sad iron Mfg. Co, Phila., Pa. Williams, A. C., Ravenna, O. Sand Hinat Apparatus Ward, Edgar T. & Sons, Boston, Mass.

Sand Paper

Baeder, Adamson & Co., Phila, Pa.

Sash Balances
Caldwell Mfg. Co., Rochester, N. Y.
Pullman Sash Balance Co. Roche
N. Y. ter, N. R. & Co., Rochester, N. Y.

Sash Cords and Chains Bridgeport Chain Co., Bridgeport, Conn. Morton, Thos., 65 Elizabeth, N. Y. Samson Cordage Works, Boston, Mass. Silver Lake Co., Boston, Mass. Smith & Egge Mfg. Co., Bridgeport.

W. & E. T. Co., The, New Haven, Fitch,

eash Pulleys Fox Machine Co., Grand Rapids, Mich. Grand Rapids Hardware Co., Grand Rapids, Mich Palmer Hardware Mfg. Co., Troy, N. Y.

Sash Weights
Barney & Reed Mfg. Co., Boston, Mass.
Brown, E. E. & Co., Philadelphia, Pa.

Sausage Stuffers National Specialty Mfg. Co., Phila., Pa

Saws Atkins, E. C. & Co., Indianapolis, Ind. Bishop, Geo. H. & Co., Cincinnati, Ohio. Disston, Henry & Sons, I nc., Phila, Pa. National Saw Co., Newars, N. Simonds Mfg. Co., Fitchburg, Mass.

Saw Clamps Disston, Henry & Sons, Inc., Phila., Pa

Saw Guides
Thomson Bros. & Co., Lowell, Mass. Saw Handles Ladd, W. C., Bristol, Conn.

Saw Sets Disston, Henry & Sons, Inc., Phila., Pa. Taintor Mfg. Co., 9 to 15 Murray, N. Y.

Saw Tools Atkins, E. C. & Co., Indianapolis, Ind.

American Cutlery Co., Chicago, Ill. Chatillon, John & Sons., 85-89 Cliff, N. Y. Chicago Scal Co., Chicago, Ill. Pelouse Scale & Mfg. Co., Chicago, Ill. Standard Scale & Supply Co., Pittsburgh.

Scrap Metals
Armstroug, R. S. & Bro., Atlanta, Ga.
Atlanta Junk Co. Atlanta, Ga.
Blake, M. J. & M., 10th Ave. and 15th
St. N. Y. St., N. Y. Botjer, C., Hobeken, N. J. Greiner, F., Philadelphia, Pa. Hitner, H. A. & Sons, Phila., Pa. Hofeller, Theo. & Co., Buffalo, N. Y. Kennedy, L. E. & Co., 55 Liberty St.,

N Y. Leaf, E. B. & Co., Philadelphia, Pa. Leonard, John & Co., 22 Broadway, N. N. J. Iron & Metal Co., Paterson, N. J. Phillips, F. R. & sons Co. Philla, Pa. Rogers, W. H., Bridgeport, Com. Samuels, M. Sons, Brooklyn, N. Y. Smith, Morton B. Co., New York.

Scrapers, Road
American Steel Scraper Co., Sidney, O.
Aultman Co., Canton, Ohio.
Kilbourne & Jacobs Mig. Co., Colum
bus, Ohio.,
Sidney Steel Scraper Co., Sidney, O.
Syracuse Chilled Plow Co., Svracuse,

Screens, Perforated Metal

Screens, Window and Door Daroy, Edw. & Sons, Philadelphia, Pa.

Daroy, Edw. & Sons, Fulladelphia, Pa.

Screw Cutting Dies
Card, S. W. Mfg. Co., Mansfield, Mass.
Geometric Drill Co., Westville, Conn.
Rogers, Jno. M. Hoat Gauge & Drill
Wks., Gloucester City, N. J.
Wells Bros. & Co., Greenfield, Mass.
Wiley & Husseli Mfg. Co., Greenfield,
Mass. Winter Bros., Wrentham, Mass.

Braunsdorf-Mueller Co., Elizabeth, N. J. Brown, R. H. & Co., New Haven, Conn. Goodel-Fratt Co., Greenfield, Mass. Mayhew, H. H. Co., Shelburne Falls, Mays Mays North Bros. Mfg. Co., Philadelphia, Pa. Sawver Tool Co., Fitchburg, Mass. Union Mfg. Co., Buffalo, N. Y.

Screw Machine Products
Dodge Machine Screw Co., Boston, Mass

Screw Machinery American Tool Was Co., Charles San Brown & Sharpe Mr. Co., Providence, Costio, J. E. Meb. Wks., Brooklyn, N. Y. Draper Macn. Tool Co., Worcestr. Mass, Garvin Machine Co., Spring and Varick Jones & Lamson Mcn.Co., Springfield, Vt., Windsor Mch. Co., Windsor, Vt.

Coach
Hall's Sam'l Sons, 223 West 10th St., 33. 1
Haskell, Wm H Mg. Co., Pawtucket, R. t
Machine
American Screw Co., Providence, R. I.
Biake & Johnson, Waterbury, Conn.
Chicago, Strew Co., Chicago, Ill.
Haskell, Wm. H. Mfg. Co., Pawtucket
Hubbell, Harvey, Bridgeport, Conn.
Illinois Screw Co., Chicago, Ill
Illinois Screw Co., Chicago, Ill am't Sons, 223 West 10th St., N.Y ,Wm H Mfg.Co., Pawtucket, R.1 Hubbell, harvey, blooglov Colmillinois screw Co., thicaso, Hi Miles, P. S., 20 Quarry, Fhiadelohia. New Britain Hdw. Mig. Co., New Brit-sin, Conn. Nicara - crew To, Buffalo, N. Y. Phila, Mach. Screw Works, Phila, Pa. Pitsburgh Screw & Bolt Co., Pittaburgh,

Pa. all Screw & Bolt Co., Pittsburgh, Reef & Curtis Mch. Screw Co. Worces-ter, Mass. Rhode Island Tool Co., Page 1 dass. Island Tool Co., Providence, R. I. ster Mch. Screw Co., Worcester. Rhode Island 100 Co., Frowlence, K. I. Worcester Mch. Screw Co., Worcester, Wood American Screw Co., Providence, R. I. Franklin Moore Co., Winsted, Conn. Reading Hardware Co., Reading, Pa. Reading Screw Co., Norristown, Pa.

Screll Saws
Barnes, W. F. & John Co., Rockford, Ill
Millers Falls Co., 28 Warren St., N. Y
Seneca Falls Mfg. Co., Seneca Falls, N. Y

Scythe Stones and Whetstones Cleveland Stone Co., Cleveland, O. Pike Mfg. Co., Pike Station, N. H.

Seamless Steel Tubes Janney, Stellwood, 487 Broadway N. Y. Janney, Stelnmetz & Co., Phila., Pa. National Tube Co., Pittsburgh, Pa.

Security Snaps Sundries Mrg. Co., South Bend, Ind. Set Screw Protectors

nfield, H. O., Bridgeport, Conn. Sewing Machines

Demorest Mfg Co., Williamsport, Pa. National Sewing Machine Co., Belvi-dere, Ill.

Shafting

Datting
Cresson, Geo. V. Co., Philadelphia, Pa.
Dodge Mfg. Co., Mishawaka, Ind.
Fairmount Med. Co., Philadelphia, Pa.
Fhished Steel Co., Youngstown, O.
Jones & Laughlins Co., Pittsburgh, Pa
Pardee C. works, Perth Amboy, N. J.
Pittsburgh Steel Shafting Co., Rankii
Pa.

Pa. tow Mfg. Co., Binghamton, N. Y roods, T. B. Sons, Chambersburg Shaped Iron and Steel

Shaped Iron and Steel
Allentown Rolling Mill, Allentown, Pa.
American stee Hoop Co., Battery Park
Building, N. Y.
American Steel & Wire Co., Chicago, Ill.
Forest City Steel & Iron Co., Chicago, Ill.
Lindsay, W. W. & Co., Phila., Pa.
Lockhart Iron & Steel Co., Pittsburgh,
National Steel Co., Bridgeport, O.
Passaic Rolling Mill Co., Paterson, N. J.
Phenix Iron Co., Phila., Pa.
Pittsburgh Steel Shafting Co., Rankin,
Ph.

ublic Iron & Steel Co., Chicago, Ill.

Shapers
Barker-Chard Mach. Tool Co, Cin-cinnati. O. Gould & Eberhardt. Newark, N. J. Potter & Johnston Co., Pawtucket, R. L.

Shear Knives
Pittsburgh Shear, Knife & Machine Co,
Pittsburgh Pa.
Trethewey, Sam'l & Co., Lt/L. Pittsburgh

Shears and Scissors
Acme Shear Co., Bridgeport, Conn.
Bridgep rt Mfg Co., Bridgeport, Conn.,
Cattaraugus Cutlery Co., Little Valley,

N Y.
Heinisch's, R. Sons Co., Newark, N. J.
Lanc Cutlery Works, Cedar Rapids, Ia.
National Cutlery Co., Phila., Pa.
Wiebusch & Hilger, Ltd., 3-15 Murray
St., N. Y.

Shears. Metal Carlin's, Thomas Sons Co., Allegheny,

Sheet Bars National Seel Co., Battery Park Build-

Sheet and Bolt Copper Hungerford, U. T., Brass & Copper Co.,

Sheet and Relled Brass
Sheet and Relled Brass

Sheet Metal Machinery Adriance Mach. Works, Brookiyn, N. Y. Sheets, Galvanized
American Sheet Steel Co, New York,
McCullough Iron Co., Wilmington, Del.

Sheets, Iron and Steel
American Sheet Steel Co., New York,
McCullough Iron Co., Wimington, Del,
National Steel Co., Bridgeport, O.
Singer, Nimick & Co., inc., Pittsburgh,
Wister, L. & R. & Co., Philadelphia, Pa.
Alan Wood Co., Philadelphia.

Sheet Zinc illinois Zinc Co., Peru, III. Matthlessen & Hegeler Zinc Co., La Salle, III.

Shelf Boxes
Heller Box Co., Montclair, N. J.
Moore, C. P., Ravenswood, W. Va.

Shelf Ladders
Bicycle Step Ladder Co., Chicago, Ill.
Bicycle Step Ladder Co., Holyoke, Bleyele Step Ladder Co., Unicago, a Coburn Trolley Track Mig. Co., Holyo Mass. Milbradt, G. A. & Co., St. Louis, Mo. Morley Bros., Saginaw, Mich.

*helving Warren, J. D. Mfg. Co., Chicago, Ill. Shipbuilders
Newport News Shipbuilding & Dry Dock

Shovels, Spades and Scoops Sidewalk Cleaners Hiles, C. A. & Co, Chicago.

Sinks
Kilbourne & Jacobs Mfg. Co., Colum-

Skates, ice Skates, ice Avery Stamping Co., Cleveland, O. Dame, Stoddard & Co., Boston, Mass. Union Hardware Co., Torrington, Conn

Skate Sharpeners Osborn Mfg. Co., Cleveland, O.

Skylights Drouve. G. Co., Pridgeport, Conn. Smelting Works Reeves, Paul S., 760 S. Broad, Phila.

Soapstone Goods Pike Mfg Co. Pike Station, N. H. Steward, D. M. Mfg. Co., Chattanooga,

tenn
Soldering Copper Handles
Soldering Li, T., Brass & Copper Co., worth St., N. Y.

Soldering Coppers
Hungerford, U. T., Brass & Copper Co.,
121 Worth St., N. Y.

Speaking Tubes Ostrander, W. R. & Co., 201 Fulton St.,

Specialty Manufacturers Franklin, H. H. Mfg. Co., Syracuse, N. Y. Smith & Egge Mfg. Co., Bridgeport, Ct.

Spelter Illinois Zinc Co., Peru, III. Illinois Zinc Co., La Hegeler Zinc Co., La

Spelter Solder Hungerford, U. F., Brass & Copper Co., 121 Worth St., N. Y.

Spikes
American Iron & Steel Mfg. Co., Lebanon Pa.

Spoons and Forks International Silver Co., Meriden, Ct.

Sporting Goods
Dame, Stoddard & Co, Boston, Mass.
Spray Pumps—(See Pumps)

Springs
American Steel & Wire Co., Chicago, It.
Barnes, Wallace Co., Bristol, Conn.
Cary Spring Works, 240 W 29th St., N.Y.
Chatillon, Joha & Sons, S5-89 Cliff St.
New York. New York.
Clark & Cowles, Plainville, Conn.
Clark & Cowles, Plainville, Conn.
Claveland Wire's p. ing Co. Cleveland, O.
Dunbar Bros., Bristol, Com.
Gibson, W. D. Co., Chleag;
Miller & Van Winkle, Brooklyn, N. Y.
Morgan Spring Co., Worcester, Miss.
Sabin Machine Co., Montpeller, V.C.
Scott, Chas. Spring Co., Phila, Pa.
Tuck Mfg. Co., Brockton, Mass.
Welch, T. F. Mfg. Co., Goston, Mass.

Weich, T. F. Mfg. Co., Boston, Mass. Springs, Wagon, Etc. Wurster, F. W. & Co., Brooklyn, N. Y. Wurster, F. W. & Co., Brooklyn, N. Spring Cotters Brooks, M. S. & Sons, Chester, Conn. Hol inger Fence Co., Greenville, O.

Hol inger Fence Co., Hol inger Fence Co., Spring Hinges Sommer Bros., Brooklyn, N. Y Bommer Bros., Brooklyn, M. Y Bommer & Williams Hdw. Co.

Spring Hinges
Rommer Bross, Brooklyn, N. Y
Van Wagoner & Williams Hdw. Co.
Cleveland, O.
Sprocket Chain
Buhl Malleable Co., Detroit, Mich.
Spruce Cutters, Foot and Power
Shuster, F. B Co., New Haven, Conn.
Stacks
Scaffe, Wm. B. & Sons, Pittsburgh.
Stambed Ware
Jenkinson, R. C. & Co., Newark, N. J.
Keen & Hagerty, Mig. Co., Baltimore,
New York Stamping Co., Brooklyn, N. Y.

een a magery, ang. vo. sandmure ew York Stambing Co., brooklyn, N. Y amping, Sheet Metal merican Railway Supply Co., 24 Park Place, N. Y. n erican Steel Scraper Co., Sidney, O. leveland Stamping & Tool Co., Cleve-land Object of the Stamping & Tool Co., Cleve-

land, Ohio. avis & Buxton Stamping Co., Worces

ter, Mass. Jenkinson, R. C. & Co., Newark, N. J. Konigslow, E. & Bro., Cleveland, Ohio. McKeuna Bros. Erass Co., Ltd., Pitta-burg Pa.

burg Pa. fossberg, Frink Co., Attleboro, Mass. leed & Curtis Mch. Screw Co., Worces-ter, Mass. eamless Metal Ware Co., 277 Broadter, Mass.
Seamless Metal Ware Co., 277 Broadway, N. Y.
Wheeling Hinge Co., Wheeling, W. V.
Wilson & Smith, Worcester, Mass.
Staple Vachines, Automatic
Shuster, F. B. Co., New Haven, Conn.

Shuster, F. B. Co., New Havru, Com-Staples and Double Pointed Tacks Grand Prossing Tack Co., Grand Crossing, Ill.
Milwaukee Tack Co., Milwaukee, Wis.
Titchener, E. H. & Co., Binghamton

N. Y.

Steam Hammers
Dienelt & Eisenhardt, Philadelphia.
Dudgeon, Richard, 24 Columbia St., N. Y.
Pittsburgh, Pa.
Fittsburgh, Pa.
Sellers, Wm. & Co., Inc., Phila., Pa.
Steam Heating
Webs.cr. Warren & Co., Camden, N. J.

websier, warren & Co., Camden, N. J. Steam Separators Harrison safety Boller Wks., Phila., Pa. Webster, Warren & Co., Camden. Steam Shovels

Shovel Co., Lorain, O.

They utomatic shovel Co., Lorain, O. Steam Specialties Crosby Steam Gage & Valve Co., Boston, Masson Regulator Co., Boston Mass, Sreel Buildings American Bridge Co., East Berlin, Ct. Boston Bridge Works, Boston, Mass. New England Structural Co., Boston, Mass.

Mass Riter-Conley Mfg. Co., Pittsburgh, Pa. Scaife, Wm. B. &. Sons, Pittsburgh, Pa. Steel Chimneys Lindsay W. W. & Co., Phila., Pa. Steel, Cold Rolled Strip Willouds Hobbs Mfg. (So. Reidgepoor)

Bridgeport. Wilmot & Hobbs Mfg. Co., Br Wolff, R. H. & Co., Ltd., 11 and Harlem River, N. V. Steel Flanges, Weldless Steel Forgings and Castings tethlehem Steel Co., So. Bethlehem, Pa

Steel Hoops
American Steel Hoop Co., Battery Park Building, V. Steel Importers Hobson, Houghton & Co., 98 John St. N. Y. Jesop, Wm. & Sons, Sheffield, England, or 91 John St., N. Y.

e, A. & Co., 1 Broadway, N. Y. elock, Lovejoy & Co., New York and Boston. Steel (Mushet's Special

Jones, B. M. & Co., Boston.
Steel Manufacturers
Therefore Steel Hoop To., Battery Park American Steel H.op. o., Battery Park Building, N. Y. American Steel & Wire Co., Chicago, Ill. Boker, Hermann & Co., 108 Duane St., New York. Braeburn Steel Co., Canton, Ohio Champion Iron & Steel Co., Muskegon, Chester Steel Co.

Mich.
Chester Steel Castings Co. Ph.'s., Pa.
Chrome Steel Works, Brooklyn, N. Y.
Crescent Steel Co., Pittsburgh, Pa.
Frankford Steel Co., Philadelphia.
Hobson, Houghton & Co., 98 John St.,

N. Y.
Jessop, Wm. & Sons, Sheffield, England,
or 9t John St., New York.
Jones & Laughlins, Ltd., Pittaburgh, Pa.
Kidd Grov. & Burgner Steel Wire Co.,
Mck.es's Rocks. Pa.
La Belle Steel Co., Pittaburgh, Pa.
Lorain Steel Co., L)rain, Ohlo.

Novembe

c

b

1

akens Iron & Steel Co., Coatesville, Pa. ash, Geo. & Co., Chicago. ational Steel Co., Battery Park Build-ing N.Y.

National Steel Co., Battery Park Bullding N.Y.

ewkirk, J. B. & Co., Philadelphia, Pa.
Otts Steel Co., Ltd., Cleveland. Ohio.

Republic Iron & Steel Co., Chicago, Ill.
Rowland, Wm. & Harvey, Frankford,
Philadelphia.

Singer, Nimick & Co., Inc., Pittsburgh.
Wardiow, S. & C., Sheffield, England.
Wilmot & Hobbs Mfz., Co., Bridgeport.

Manufacturers Agents

Ogden & Wallace, 577-583 Greenwich St.,
New York.

Snyder, W. P. & Co., Pittsburgh, Pa.
Tranessee Coal, Iron & R. R. Co., Birmingham, Ala.

Virginia Iron, Coal and Coke Co., Bristol, Va.—Tenn.

Steel. Self Hardening & Davis, 85-87 John St., N. Y.

Steel Stamps and Stencil Dies Eacker, L. A. Stamp Wks., Little Ferry,

s. Geo. M., Jr., 61 Fulton St., N. werdtle & Siebert, Bridgeport, Co

treel, Tool

Braeburn Steel Co., Braeburn, Pa.
Canton Steel Co., Canton, Obio.
Crescent Steel Co., Pittaburgh, Pa.
Denman & Davis, 85-87 John St., N. Y.
Frankford Steel Co., Philadelphia, Pa.
Jessop, Wm. & Sons, Sheffield, England
H. John St., N. Y.
Jones, B. M. & Co., Boston, Mass.
La Belle Steel Co., Pittaburgh, Pa.
Nash, Geo. & Co., Chicago.
Singer, Nimick & Co., Pittsburgh, Pa. Steel, Tool

Singer, Nimics & Co., Thissourga, Fa.

Step Ladders, Rolling

Bicycle Step Ladder Co., Chicago, Ill

Loburn Trolley Track Mfg. Co., Holwoke, Mass.

Mibradt, G. A. & Co., St. Louis, Mo.
Morley Bros., Saginaw, Mich.

Stocks and Dies

Cord. S. W. Mfg. Co., Wangfield, Wass.

Card, S. W. Mfg. Co., Mansfield, Mass. Curtis & Curtis, Bridgeport, Conn. Hollands Mfg. Co., Erie. Pa. Jones & Lamson Mch. Co., Springfield.

Vt., Jarecki Mfg. Co Erie, Pa. Saunders' Sons, D., Yonkers, N. Y. Wells Broa. & Co., Greenfield, Mass. Wilay & Bussell Mfg. Co., Greenfield. Winter Bros., Wrentham, Mass.

Stone Cutting Machinery Stone Working Machinery Patch, F. R. Mfg. Co., Rutland, Vt. Stop Screws ... Co., Chicago, Ill.

Store Fixtures Warren, J. M. Mfg. Co., Chicago, Ill. Storm Window Fasteners Woodruff W.W. & Sons, Mt. Carmel, Ct.

Stove Linings
Ostrander Fire Brick Co. Troy, N Y.
Stove Pipe Thimbles
Cheney, S. & Son, Manitu N. Y. reade Mfg. Co., Freeport, Ill.

Stoves, Oil, Vapor and Gasoline Novelty wig. Co., Jackson, Mich. Schneider & Trenkamp Co., Cloveland,

Straightening Machines, Wire and Sheet Metal Shuster, F. B. Co., New Haven, Conn.

Structural Iron and Steel Work American Bridge Co., East Berlin, Ct. Boston Bridge Works, Boston, Mass. Du Bois Iron Works, Du Bois, Pa. Eustern B idge & Structural Co., Wor-cester, Mass. Forest City Steel & Iron Co., Cleveland,

Forest City Steel & Iron Co., Cleveland, Ohio. Bilinois Steel Co., Chicago, Ill. Moseley Iron Bridge & Boof Co., 39 Cortlandt St., N. X. New England Structural Co., Boston, Mass. Mass.
Phoenix Iron Co., Philadelphia, Pa.
Ritter-Conley Mfg. Co., Pittsburgh, Pa.
Stewart Iron Works, Cincinnati, Ohio.
West Side Foundry Co., Troy, N. Y.

Sulphuric Acid
Matthiessen & Hereler Zinc Co., La

Swaging Machine : Excelsior Needle Co., Torrington, Ct. Table Ware International Silver Co., Meriden, Ct.

Tacks. Brads. &c. Diamond Tack & Nail Works, Raynham,

Diamond race a New vo. Mass.

Grand Crossing Tack Co., Grand Cross.
ing, ill.
Milwaukee Tack Co., Milwaukee, Wia.
Plymouth Mills, Plymouth, Mass.
tipley & Bartlett, Plymouth, Mass.
Shelton Co., Birmingham, Conn.

Tack and Nail Machinery Kimball Bros. & Sprague, Brockton, Sweetzer, W. A., Brockton, Mass.

Tanks, Iron and Steel Scalfe, Wm. B. & Sons, Pittsburgh.

Tapes Lufkin Rule Co., Saginaw, Mich.

Tap Holder | Works, Hartford, Conn. Tapping Machines

Tr.ps and Dies estey, Chicago, Ill. estey, C. H. & Co., Chicago, Ill. lu terdeld & Co., Derby Line, Vt. Card, S. W. Mig. Co., Mansfield, Mass. Leace, E. F. Co., Greenfield, Mass. Wells Bros. & Co., Greenfield, Mass. Wiley & Russell Mig. Co., Greenfield Winter Bros., Wrentham, Mass.

Telephones Hawson Electric Co., Elyria, Ohio. Ter e Plate American l'in Plate Co., N. Y.

Thimble Skeins
W. B., Chicago, Ill.

Time Recorders

Chicago Time Register Co., Chicago, El. Cieveland Register Co., Oberlin, O. Nanz, C. & Co., 127 Duane St., N. Y. Simplex Time Recorder Co., Gardner, Mass Waggoner Watchman Clock Co., Grand Rapids, Mich.

Philadelphia Roll & Mch. Co. Phila., Pa. Phillips, F. R & Sons Co., Phila., Pa. Tinners' Tools and Machines

Tin Plate American I'in Plate Co., N. Y. Champion Iron & Steel Co., Muskegon Mich.

Tin Plate Machinery Lloyd Booth Co., Youngstown, Ohlo.

Tinware Keen & Hagerty, Baltimore, Md. Seamless Met.l Ware Co., 277 Broadway, N. Y.

Tinware Machinery Shuster, F. B. Co., New Haven, Conn. Tobin Brouze
Ansonia Brass & Copper Co., 99 John St., N. Y.

Toe Calks ardt & Co., Berlin, Schoneberg,

Toe Calks, Steel Burke, P. F., Boston, Mass

Tool Chests

Am. Tool Chest Co., 200 W. Houston St.
New York.
Bliss, R. Mfg. Co., Fawtucket, R. I.

Tool Grinders
Seilers, Wm. & Co., Inc., Phila., Pa.
Union Mfg. Co., Buffalo, N. Y. Tool Holders

Armstrong Bros. Tool Co., Chicago. Hill Tool Co., Anderson, Ind. Hoggson & Pettis Mfg. Co., New Haven,

Tools Athol Machine Co., Athol, Mass
Brown, R. H. & Co., New Haven, Conn.
Goodell Pratt Co., Greenfield, Mass.
Mayhew, H. H. Co., Sheiburne Falls.
Millers Falls Co., 28 Warren St., N. Y.
Springfield Machine Screw Co., Spring
field, Mass.
Stanley Rule & Level Co., 29 Chambers
St., New York.
Starrett, L. S. Co., Athol, Mass.
Stevens, J., Arms & Tool Co., Chicopee.

Tools, Blacksmith and Wheel-

wright
Champion Blower & Forge Co., Lancaster, Pa.
Wiley & Russell Mfg. Co., Greenfield,
Mass.

Tools, Steam and Gas Fitters' Saunders' Sons, D., Yonkers, N. Y. Torches, Oil and Gasoline

Schneider & Trenkamp Co., Cleveland, O Tote Boxes Clark, W. J. & Co., Salem, O.

Transom Openers Ormsby, E. A. Melrose, Mass. Tree Guard Hartman Mfg. Co., 309 Broadway, N. Y. Up-to-date Mfg. Co., Terre Haute. Ind.

Trolleys Box, Alfred & Co., Philadelphia, Pa. Trowels

Bishop, Geo. H. & Co., Cincinnati, O. National Saw Co., Newark, N. J. Trucks

Boston & Lockport Block Co., Lockport. Kilbourne & Jacobs Mfg. Co., Columbus. Syracuse Chilled Plow Co., Syracuse. Variety Machine Co., Warsaw, N. Y.

Tub Hoops Oatman Bros., Medina, Ohio. Tube Expanders Henderer, v. L. Sons, Wilmington, Del.

Tubes, Seamless Drawn Copper, Brass and Bronze Hungerford, U. T., Brass & Copper Co., 121 Worth St., N. Y. Randolph Clowes Co., Waterbury, Conn.

Randoph Care Rans & Copper Co., Tabing, Brass & Hungerford, U. T., Brass & Copper Co., 12! Worth St., N. Y. 1vins, Ellwood, 48! Broadway N. Y. Phœulx Tube Co., Brooklyn, N. Y. Spofford, W. S. & Son, Providence, R. I.

Tubing, Fiexible Metallic Sharp, Klumph & Sisson Co., Chicago. Tubing, fron
Phonix Tube Co , Brooklyn, N. Y.

Tubing, Seamless Ivins Ellwood, 487 Broadway, N Y. Tubing, Steel
He at Transmission Co., Danbury, Ct.,
Ivins, Ellwo d, 487 Broadway, N. Y.
Janney, Steinmetz & Co., Phila., Pa.
Leng's John S Son & Co., 4 Fletcher St.
McInnes, C. E. & Co., Phila., Pa.
National Tube Co., Pittsburgh, Pa.
Wilmot & Hobbs Mfg. Co., Bridgeport.

Tumbling Barrels
Henderson Bros., Waterbury, Conn. Turnbuckles Cleveland City Forge & Iron Co., Cieve-

land U.

Twist Drills
Cleveland Twist Drill Co., Cleveland,
Cleveland Twist Drill & Machine Co., New Cleveland Twist Drill Co., Cleveland, Morse Twist Prill & Machine Co., New Bedford, Mass. New Process Twist Drill Co., Taunton, Mass. Slocomb, J. T. & Co., Providence, R. L. Standard Tool Co., Cleveland, O.

Twist Drill Grinders

Heald, L. S. & Son, Barre, Mass. Washburn Shops of Worcester Poly-technic Inst., Worcester, Mass.

Union Couplings Dart, E. M. Mfg. Co., Providence, R. L.

Upholsterers' Hardware Hungerford, U. T., Brass & Copper Co. 121 Worth St. N. Y.

Valves. Gas, Water and Steam Alves. tens, water and occasion.

Ashton Valve Co., Boston, Mass.

Chapman Valve Mfg. Co., Boston.

Crosby Steam Gage & Valve Co., Boston.

Jenkins Bros., 71 John, N. Y.

Kenneav Valve Mfg. Co., 75 John St.,

N. Y. McNab & Harlin Mfg. Co., 56 John, N. Y. Mason Itegulator Co., Boston, Mass. Wood, R. D. & Co., Philadelphia, Pa.

Varnish tandard Varnish Works, 29 Broadway, N. Y.

Vegetable Slicers Streeter, N. R. & Co., Rochester, N. Y.

Ventilating Fans American Blower Co., Detroit, Mich. Bayley, Wn. & Sons Co., Milwaukee, W Boston Blower Co., Hyde Park, Mass. Buffaio Forge Co., Buffaio, N. Y. ExcterMachine Wks., Boston, Mass.

Ventilating System Ormsby, C. A., Melros ford, Ill.

Ventilator Appliances Howard & Morse, 45 Fulton St. N. Y

Ventilators Drouve, G. Co., Bridgeport, Conn.

Ventilator Openers

Ormsby, E. A., Melrose, Mass

ol Machine Co., Athol, Mass. nall & Keeler Mfg. Co., Edwards Bigmall & Keeler Mrg. Co., Edwards-ville, II.
Hollands Mrg. Co., Erle, Pa.
Howard Iron Works, Buffalo, N. Y.
Lewis Tool Co., 44 Barclay St., N. Y.
Parker, Chas. Co., Meriden, Conn.
Prentiss Vise Co., 44 Barclay, N. Y.
Utica, Drop Forge & Tool Co., Utica,
N. Y.

N. Y.

Wagon Jacks
Covert Mfg. Co., West Troy, N. Y.
Covert's Saddlery Works, Farmer, N. Y.
Lane Bros. Co., Poughkeepsle, N. Y.
Morrow, P. C., Newport, Pa.

Hal's, Sam'l Sons 229 West 10th St., N. Y Haskell, Wm. H. Mfg. Co., Pawtucket, R. I. ut & Washer Mfg. Co., Milwaukee, Wis ilson & Smith, Worcester, Mass.

Washers, Lead Milton Mfg. Co., Milton, Pa.

Brammer, H. F. Mfg. Co., Davenport, Ia.
Chattanooga Washing Machine and
Wringer Co., Chattanooga Tenn.
Clark. Quien & Moree, Peorfa, Ili.
Richmond Cedar Works, Richmond, Va
Wayne, Anthony Mfg. Co., Ft. Wayne,
Ind.

Watchman's Clocks Nanz, C. & Co., 127 Duane St., N. Y. Waggoner Watchman Clock Co., Grand Rapids, Mich.

Water Gates Kennedy Valve Mfg. Co., 73 John St., N. Y.

Water Wheels
Poole, Robt. & Son Co., Baltimore, Md.

Weldless Steel Flanges Latrobe Steel Co., Philadelphia, Pa Well Supplies

ok. A. D., Lawrenceburg, Ind.

Wheelbarrows
American Steel Scraper Co., Sidney, O. Kilbourne & Jacobs Mfg. Co., Columbus.
Syracuse Chilled Plow Co., Syracuse, N. Y.

Wind Mills Flint & Walling Co., Kendallville, Ind. Window Cord on Cordage Works, Boston, Mass

Window Fasteners
Stanley Works, New Britain, Conn. Window Stop Adjusters
Ives, H. B. & Co., New Haven, Conn.
Window Weights

rnev & Reed Meg. Co., Boston, Mass.

Wire

Cleveland Wire SpringCo., Cleveland, O
Dillon-Griswold Wire Co., Sterling, Ill.
Grand Crossing Tack Co., Grand Crossing, Ill.
Ridd Bros. & Burgher Steel Wire Co.,
McKee's Rocks, Pa.
Miller & van Winkle, Brooklyn, N. Y.
National Wire Co., New Haven, Cr.
New Haven Wire 4fg. Co., New Haven.
Preutiss, Geo. W. & Co., Holyoke, Mass.
Reading Serew Co., Norristown, Pa.
Spencer Wire Co., Easton, Ps.
Summit Wire Co., Caston, Ps.
Summit Wire Co., Caston, Ps.
Summit Wire Co., Cuyahoga Falis, O.
Townsend, C. G. & E. P., New Brighton.
Trenton Iron Co., Trenton, N. J.
Wolff, K. H. & Co., Ltd., 118th St. and
Harlem River, N. X.
Wright & Colton Wire Cloth Co., Worcester, Mass.
Wire Chains

Wire Chains

Bridgeport Chain Co., Bridgeport, Ct. Hungerford, U. T., Brass & Copper Co., 121 Worth St., N. Y. Onelda Community, Ltd., Niagara Falla, N. Y.

Wire Cloth

Wire Cloth

Baraum, E. T., Detroit, Mich.
Clinton Wire Cloth Co., Clinton, Mass
Derby, Edward & Sons, Philadelphia.
Estey Wire Works Co., 65 Fulton St.,
New York.
Gilbert & Bennett Mfg. Co., 44 Cliff St.,
New York.
Howard & Morse, 45 Fulton, St., N. Y.
Hungerford, U. T. Brass & Copper Co.,
121 Worth St., New York.
Ludlow Saylor Wire Co., St. Louis, Mo.
Michigan Wire Cloth Co., Detroit, Mich.
New Freedom Wire Cloth Co., New
Freedom, Pa.,
N. J. Wire Cloth Co., Trenton, N. J.
Scheeler's Sons, Buffalo, N. Y.
Tyler, W. S. Co., Cleveland, O.
Wir & Wire Bros., Cortland, N. Y.
Wright & Colton Wire Cloth Co.,
Worcester, Mass.

Wire Cloth & Wire Cloth Co.,
Wire Cloth & Co.,
Wire Cloth Co.,

Wire Cutters.

handler & Farquhar, Boston, Mass. ing, J. M. & Co., Watertown, N. Y. tica Drop Forge & Tool Co., Utica, N. Y.

Wire Dies

land, Wm., Trenton, N. J. Wire Drawing Machinery Morgan Construction Co., Worcester. Mossberg & Granville Mfg. Co., Providence, R. I.

Wire Fences-(See Fencing, Iron and

Wire Goods

Vire Goods

Rrooks, M. S. & Sons, Chester, Conn.

Darby, Edward & Sons, Philadelphia.

Gilbert & Bennett Mfg. Co., 44 Cliff St.,

New York.

Jenckes, E. Mfg. Co., Pawtucket, R. I.

Michigan Wire Coth Co., Detroit, Mich.

Scheeler's Sons, Buffalo, N. Y.

Wickwire Bross, Cortlandt, N. Y.

Wire Goods Co., Worcester, Mass.

Wire Forming Machinery Matchine To., Bridgeport, Manville, E., J. Mch. Co., Waterbury, Nilson, A. H. Mch. Co., Bridgeport, Shuster, F. B. Co., New Haven, Conn

Wire Mill Machinery Braddock Mch. & Mfg. Co., Braddock, Pa

Turner, Vaughn & Taylor Co., Cuya-hoga Falls, O. Wire Mats Hartman Mfg. Co., 309 Broadway, N. Y.

Wire Nails Wife Nalis
American Screw Co., Providence, R.
Dillon-Griswold Wire Co., Sterling, Ill.
Grand Crossing Tack Co., Grand Crosing, Ills.
National Wire Co., New Haven, Ct.
Summit Wire Co., Cuyahoga Falls, O.
Townsend, C. C. & E. P., New Brighto

Wire Nail Machinery
Braddock Mach. & Mfg. Co., Braddock,

Pandock Mach. & Mis.
Pa.
Miller, H. J., Bridgewater, Mass.
National Machinery Co., Tiffin, Ohio.
Turner, Vaugin & Taylor Co., Cuyaho-ga Falls, O.

Wire Parts Jenkinson, R. C. & Co., Newark, N. J. Wire Reels Adjustable Shuster, F. B. Co., New Haven, Conn.

Shuster, F. B. Co., New Haven, Conn.
Wire Rods. Steel
Consolidated Iron & Steel Co., Bristol
Pa.
National Wire Co., New Haven, Conn.
Nicoll, '& Co., 39-51 Wall St., N. Y.
Prentisa, Geo. W. & Co., Holye, Mass.
Spencer Wire' O., Worcester, Mass.
Spencer Wire' O., Worcester, Mass.
Wolff, R. H. & Co., Ltd., 18th Street
and Harlem River, N. Y.

and Hariem Raver, N. Y.

Wire Rope, Iron and Steel

American Steel & Wire Co., Chicago, Hi.
Broderick & Baseom Rope Co., St. Louis.
California Wire Works San Francisco.
Hazard Mig. Co., Wilkesbarre, Pa.
A. Leschen & Sons Rope Co., E. Louis.
M. Momber & Whyte Rope Co., Chicago.
II.
Trenton Iron Co., Trenton N. Ill.
Trenton Iron Co., Trenton, N. J.
Waterbury Rope Co., 69 South St., N. Y.
Williamsport Wire Rope Co., Williamsport, Pa.

Wire Straightening and Cutting Machinery Shuster, F. B. Co., New Haven, Conn.

Wood Hardware Bliss, R. Mfg. Co., Pawtucket, R. I. Wood Screw Machinery Cook, Asa S. & Co., Hartford, Conn. Fox Machine Co, Grand Rapids, Mich.

Wood Working Machinery Defiance Mch. Works, Defiance O. Fav J. A. & Egan Co., Cincinnati O. Seneca Falls Mfg. Co., Seneca Falls, N. T., Woods, S. A. Machine Co., So. Boston,

Woodenware Richmond Cedar Works, Richmond, Va Wrenches
Atlas Pipe Wrench Co , 121 Liberty St.,

Belden Machine Co., New Haven, Conn. Chicago House Wrecking Co., Chicago.

III.
Coes Wrench Co., Worcester, Mass. *
Hungerford, U. T., Brass & Copper Co.,
12! Worth St., N. Y.
Keystone Drop Forge Co., Phila, Pa.
K ystone Mg. Co., Buffalo, N. Y.
Peck, Stow & Wilcox Co., 27 Murray
86., N. Y. St., N. Y.
Star Mfg. Co., Carpentersville, Ill.
Trimont Mfg. Co., Roxbury, Mass.
Williams, J. H. & Co., Brooklyn, N. Y.

Wrenches, Adjustable S Pipe Keystone Mfg. Co., Buffalo, N. Y.

Wrigners
Chattanooga Washing Machine and
Wringer Co., Chattanooga, Tenn.

Zinc Nails Phillips, E. & Sons, So. Hanover, Mass. Zinc Plates Phillips, E. & Sons Go. Hanover, Mass.



The Newest and Best.

The Iver Johnson Ejector

Semi-Hammerless Single Gun.

ALMOST A DOUBLE GUN.

This gun can be opened, closed and fired without changing the position of the hands. The quickest gun to load and fire made. It is light, compact and nicely balanced. Medium choked barrel, walnut stock with rubber butt plates, case-hardened finish and safety mechanism.

SEND FOR DESCRIPTIVE CATALOGUE.

BRANCHES

New York, 99 Chambers St. Boston, 165 Washington St. Worcester, 364 Main St. Iver Johnson's Arms & Cycle Works, FITCHBURG, MASS.

Republic Iron & Steel Co.,

CHICAGO.

MANUFACTURERS

BAR IRON. BAR STEEL.

PIG IRON.

MACHINE BOLTS.
CARRIAGE BOLTS.
GIMLET POINT COACH SCREWS.

TURNBUCKLES. R. R. SPIKES.

Sales Offices:

New York,

Cleveland, St. Louis, Buffalo, Cincinnatí,

St. Paul,

Birmingham, San Francisco, Butte, Mont. ROBT. WETHERILL & CO.,

CHESTER, PA.

Manufacturers

Corliss Engines,

BERRY SAFETY

BOILERS.

CLARK & PARSONS CO., East Wilton, Maine, U. S. A.

Hay KNIVES.

Send for Circulars.
WIEBUSCH & HILGER, Ltd., N. Y.,
Sole Agents for U. S. and Canada.

Rings
warranted
18 per cent.
German
silver.

Driver

nickel plated.

WIRE PICTURE CORD,
BRIGHT WIRE GOODS,
SPOOL WIRE,
BIRD CAGE SPRINGS AND

Ossawan Mills Co., - Norwich, Ct.

Bradley Shelf Brackets,

Strong, Light and All Right.
ATLAS MFG. CO., New Haven, Ct., U.S.A.



Yard Dryers. Fold up without removing line and take in doors when not using.

Ask Hardware Dealers, or send for prices, etc.
HILL DRYER COMPANY, Worcester, Mass.



Lukens Iron & Steel Co., Coatesville, Pa. Nash, Geo & Co., Chicago.
National Steel Co., Battery Park Bullding N. Y.
Nash, Geo & Co., Chicago.
National Steel Co., Battery Park Bullding N. Y.
Nash Steel Co., Ltd., Cleveland, Ohio.
Republic Iron & Steel Co., Chicago, Ill.
Rowland, Wm. & Harvey, Frankford.
Philadelphia. Singer, Nimick & Co., Inc., Pitisburgh.
Wardlow, S. & C., Sheffield, England.
Wilmot & Hobbs Mfg. Co., Bridgeport.
Manufacturers Ayents
Ogden & Wallace, 577-585 Green wich St.,
New York. & Co., Pitisburgh, Pa.
Trunessee Cosl, Iron & R. R. Co., Birwilligham, Als.
Virginia Iron, Cosl and Coke Co., Bristol, Va.,—Tenn.

Steel. Self Hardening Davis, 85-87 John St., N. Y.

Steel Rails Lorain Steel Co., Lorain, Ohio Steel Stamps and Stencil Dies Eucker, L. A. Stamp Wks., Little Fe Geo. M., Jr., 61 Fulton St., N. erdtle & Siebert, Bridgeport. Co

Steel. Tool Braeburn Steel Co., Braeburn, Pa.
Canton Steel Co., Canton, Ohlo.
Crescent Steel Co., Pittsburgh, Pa.
Denman & Davis, 85-87. John St., N. Y.
Frankford Steel Co., Philadelphia, Pa.
Jessop, Wm & Sons, Sheffield, England,
91 John St., N. Y.
Jones, B. M. & Co., Boston, Mass.
La Belle Steel Co., Pittsburgh, Pa.
Nash, Geo. & Co., Chicago.
Singer, Nimick & Co., Pittsburgh, Pa.

Step Ladders, Rolling Bleycle Step Ladder Co., Chicago, Ill Coburn Trolley Track Mfg. Co., Hol-voke, Mass. Milbradt, G. A. & Co., St. Louis, Mo. Morley Bros , Saginaw, Mich.

Stocks and Dies ctocks and Dies
Card, S. W. Mg. Co., Mansüeld, Mass.
Curtis & Curtis Bridgeport, Conn.
Hollands Mfg. Co., Eric. Pa.
Jones & Lamson Mch. Co., Springfield.
Vt.
Jarecki Mfg. Co. Eric. Pa.
Saunders' Sons, D., Yonkers, N. Y.
Wells Bros. & Co., Greenfield, Mass.
Wiley & Russell Mfg. Co., Greenfield.
Winter Bros., Wrentham, Mass.

Stone Cutting Machinery
Gilmonr. J., Bennett Bld'g. N. Y.

Stone Working Machinery Patch, F. R. Mfg. Co., Rutland, Vt.

Stop Screws Chicago, 111. Store Fixtures Warren, J. M. Mfg. Co., Chicago, Ill. Sterm Window Fasteners Woodruff W.W. & Sons, Mt. Carmel, Ct.

Stove Linings

Stove Pipe Thimbles Cheney, S. & Son, Manliu N. Y. reade Mfg. Co., Freeport, Ill.

Steves, Oil, Vaper and Gaseline Novelty wig. Co., Jackson, Mich. Schneider & Trenkamp Co., Cleveland, Ohio.

Straightening Machines, Wire and Sheet Metal Shuster, F. B. Co., New Haven, Conn.

Shuster, F. B. Co., New Haven, Conn.

Structural Iron and Mteel Work
American Bridge Co., East Berlin, Ct.
Boston Bridge Works, Boston, Mass.
Du Bois Iron Works, Du Bois. Ps.
E utern B idge & Structural Co., Worcester, Mass.
Forest City Steel & Iron Co., Cleveland,
Ohlo.
Illinois Steel Co., Chicago, Ill.
Moseley Iron Bridge & Boof Co., 29
Cortlandt St., N. Y.
New England Structural Co., Boston,
Mass.

Mass.
Phoenix Iron Co., Philadelphia, Pa.
Riter-Conley Mfg. Co., Pitaburgh, Pa.
Stewart Iron Works, Cincinnati, Ohio.
West Side Foundry Co., Troy, N. Y.

Sulphuric Acid Matthiessen & Hereler Zinc Co., La Salle, Ill.

Salle, III.
Swaging Machine Precisior Needle Co., Torrington, Ct. Table Ware international Silver Co., Meriden, Ct.

Tacks, Brads, &c., Diamond Tack & Nall Works, Raynham, Mass.

Mass.
Grand Crossing Tack Co., Grand Cross.

In . Ill.
Miraukee Tack Co., Milwaukee, Wis.
Plymouth Mils. Plymouth, Mass.
Hipley & Bartlett, Plymouth, Mass.
Shelton Co., Birmingham, Conn.

Shelton Co., Birmingham, Conn.

Tack and Nail Machinery
Kimball Bros. & Sprague, Brockton,
Sweetzer, W. A., Brockton, Mass.

Tanks, Iron and Steel Scaife, Wm. B. & Sons, Pittsburgh.

Tapes Lufkin Rule Co., Saginaw, Mich.

Tap Holder ideal Machine Works, Hartford, Conn. Tapping Machines

ite bell, Harvey, Briggsport, Conn.

Tr.ps and Dies

eeley, C. H. & Co., Chicago, Ill.

tu terfield & Co., Derby Line, Vt.
(ard, S. W. Mig. Co., Mansfield, Mass.

Wells Bros. & Co., Greenfield, Mass.
Wiley & Russell Mig. Co., Greenfield

Winter Bros., Wrentham, Mass.

Telephones Rawson Electric Co., Elyria, Ohio. Terre Plate American l'in Plate Co., N. Y.

Thimble Skeins Chicago Ill.

Time Recorders Chicago Time Register Co., Chicago, El. Cleveland Register Co., Oberlin, O. Nanz, C. & Co., 127 Duane St., N. Y. Simplex Time Recorder Co., Gardner, Mass. Waggoner Watchman Clock Co., Grand Rapids, Mich.

Philadelphia Roll & Mch. Co. Phila., Pa. Phillips, F. R & Sons Co., Phi a., Pa. Tinners' Tools and Machines Magara Machine & Tool Works, But

Tin Plate American l'in Plate Co., N. Y. Champion Iron & Steel Co., Muskegon Mich.

Tin Plate Machinery Lloyd Booth Co., Youngstown, Ohlo.

Tinware Keen & Hagerty, Baltimore, Md. Seamless Metal Ware Co., 277 Broad-way, N. Y. Tinware Machinery

F. B. Co., New Haven, Conn. Tobin Bronze Ansonia Brass & Copper Co., 99 John St., N. Y. Tee Calks

Leonhardt & Co., Berlin, Schoneberg, Toe Calks, Steel

Burke, P. F., Boston, Mass. Tool Chests Am. Tool Chest Co., 200 W. Houston St. New York. Bliss, R. Mfg. Co., Fawtucket, R. I.

Tool Grinders Sellers, Wm. & Co., Inc., Phila., Pa. Union Mfg. Co., Buffalo, N. Y.

Tool Holders
Armstrong Bros. Tool Co., Chicago.
Hill Tool Co., Anderson, Ind.,
Hoggson & Pettis Mfg. Co., New Haven, Conn.

Tools Athol Machine Co., Athol, Mass Brown, R. H. & Co., New Haven, Conn. Goodell Pratt Co., Greenfield, Mass. Mayhew, H. H. Co., Shelburne Falls. Millers Falls Co., 28 Warren St., N. Y. Springfield Machine Screw Co., Spring Springfield Machine Screw Co., Spring field, Mass.
Stanley Rule & Level Co., 29 Chambers St., New York.
Starrett, L. S. Co., Athol, Mass.
Stevens. J., Arms & Tool Co., Chicopee.

Tools, Blacksmith and Wheel-wright
Champion Blower & Forge Co., Lan-caster, Pa.
Wiley & Russell Mfg. Co., Greenfield,
Mass.

Tools, Steam and Gas Fitters' Saunders' Sons, D., Yonkers, N. Y. Torches, Oil and Gasoline hneider & Trenkamp Co., Cleveland, O

Tote Boxes Tote Boxes Clark, W. J. & Co., Salem, O. Transom Openers Ormsby, E. A. Melrose, Mass.

Tree Guard Hartman Mfg. Co., 309 Broadway, N. Y Up-to-date Mfg. Co., Terre Haute. Ind. Trolleys

Box, Alfred & Co., Philadelphia, Pa. Trowels

Bishop, Geo. H. & Co., Cincinnati, O. National Saw Co., Newark, N. J. Trucks

Boston & Lockport Block Co., Lockport Kilbourne & Jacobs Mfg. Co., Columbus. Syracuse Chilled Plow Co., Syracuse. N. Y. ety Machine Co., Warsaw, N. Y.

Tub Hoops

Oatman Bros., Meanns, Onto.

Tube Expanders
Henderer, a. L. Sons, Wilmington, Del.

Tubes, Seamless Drawn Copper,
Brass and Brenze
Hungerford, U. T., Brass & Copper Co.,
121 Worth St., N. T.
Randolph Clowes Co., Waterbury, Conn.

Rangolph Clows
Tubing, Brass & Copper Co.,
121 Worth St., N. Y.
122 Worth St., N. Y.
123 Worth St., N. Y.
124 Worth St., N. Y.
125 Worth St., N. Y.
126 Worth St., N. Y.
127 Worth St., N. Y.
127 Worth St., N. Y.
128 Worth St., N. Y.
128 Worth St., N. Y.
128 Worth St., N. Y.
129 Worth St., N. Y.
129 Worth St., N. Y.
120 Worth St., N. Y.
120 Worth St., N. Y.
121 Worth St., N. Y.
122 Worth St., N. Y.
123 Worth St., N. Y.
124 Worth St., N. Y.
125 Worth St., N. Y.
126 Worth St., N. Y.
127 Worth St., N. Y.
127 Worth St., N. Y.
128 Wort Tubing, Flexible Metallic Sharp, Klumph & Sisson Lo., Chicago,

Tubing, Iron
Phonix Tube Co , Brooklyn, N. Y. Tubing, Seamless Ivins Ellwood, 487 Broadway, N Y.

Ivina Ellwood as Broadway, N Y.

Tubing, Steel
He at Transmission Co., Danbury, Ct.
Ivins, bliwood, 487 Broadway, N. Y.
Ivins, bliwood, 487 Broadway, N. Y.
Isaney, Steinmetz & Co., Phila., Pa.
Leng's John S Son & Co., 4 Fletcher St,
McInnes, C. E. & Co., Phila., Pa.
National Tube Co., Pittsburgh, Pa.
Wilmot & Hobbs Mfg. Co., Bridgeport.

Tumbling Barrels Henderson Bros., Waterbury, Conn. Turnbuckles Cleveland City Forge & Iron Co., Cieve-land O.

land O.

Twist Drilla

Cleveland Twist Drill Co., Cleveland.

Morse Twist Drill & Machine Co., New Bedford, Mass., New Frocess Twist Drill Co., Taunton, Mass.

Slocomb., J. T. & Co., Providence, R. I. Standard Tool Co., Cleveland, O.

Twist Drill Grinders

Heald, L. S. & Son, Barre, Mass Washburn Shops of Worceste technic Inst., Worcester, Mass

Union Couplings Dart, E. M. Mfg. Co., Providence, R. I. Upholsterers' Hardware

Hungerford, U. T., Brass & Copper Co., 121 Worth St., N. Y. Valves, Gas, Water and Steam Alves, Gas, Water and Sicum Ashton Valve Co., Boston, Mass. Chapman Valve Mfg. Co., Boston. Crosby Steam Gage & Valve Co., Boston. Jenkins Bros., 71 John, N. Y. Kennedy Valve Mfg. Co., 75 John St.,

N. Y. McNab & Harlin Mfg. Co., 56 John, N. Y. Mason Regulator Co., Boston, Mass. Wood, R. D. & Co., Philadelphia, Pa.

Varnish Standard Varnish Works, 29 Broadway,

Vegetable Slicers Streeter, N. R. & Co., Rochester, N. Y.

Stretter, N. R. Sans.

Ventilating Fans.
American Blower Co., Detroft, Mich.
Bayley, Wm. & Sons Co., Milwaukee, Wis.
Boston Blower Co., Hyde Park, Mass.
Buffalo Forge Co., Buffalo, N. Y.
Exeter Machine Wks., Boston, Mass.

Ventilating System Ormsby, C. A., Melrose, Mass ford, Ill.

Ventilator Appliances Howard & Morse, 45 Fulton St. N. Y

Ventilators Drouve, G Co., Bridgeport, Conn.

Ventilator Openers Ormsby, E. A., Melrose, Mass.

Viscs
Athol Machine Co., Athol, Mass.
Bigmall & Keeler Mfg. Co., Edwardsville, Ill.
Hollands Mfg. 'Jo., Erle, Pa.
Howard fron Works, Buffalo, N. Y.
Lewis Tool Co., 44 Barclay St., N. Y.
Parker, Chas. Co., Meriden, Conn.
Frentist Visc Co., 44 Barclay N. Y.
Utica Drop Forge & Tool Co., Utica,
N. Y. Wagon Jacks

Vngon Jacks
Covert Mfg. Co., West Troy, N. Y.
Covert's Saddlery Works, Farmer, N. Y.
Lane Bros. Co., Poughkeepsie, N. Y.
Morrow, P. C., Newport, Pa.

Washers Hall's, Sam'l Sons 229 West 10th St., N. Y Haskell, Wm. H. Mfg. Co., Pawtucket, R. I. R. I. Nut & Washer Mfg. Co., Milwaukee, Wis Wilson & Smith, Worcester, Mass.

Wilson & Smith, Worcester, Mass.

Washers, Lead
Milton Mfg. Co., Milton, Pa.

Washing Machines
Brammer, H. F. Mfg. Co., Davenbort, Ia.
Chattanooga Washing Machine and
Wringer Co., Chattanoogs Tenn.
Clark, Quien & More, Peoria, Ill.
Richmond Cedar Works, Richmond, Va
Wayne, Anthony Mfg. Co., Ft. Wayne,
Ind.

Watchman's Clocks

Nanz, C. & Co., 127 Duane St., N. Y. Waggoner Watchman Clock Co., Grand Rapids, Mich.

Water Gates Kennedy Valve Mfg: Co., 73 John St., N. Y. Water Wheels

Poole, Robt. & Son Co., Baltimore, Md. Weldless Steel Flanges
Latrobe Steel Co., Philadelphia, Pa.

Well Supplies Cook, A. D., Lawrenceburg, Ind

Wheelbarrows

American Steel Scraper Co., Sidney, O. Kilbourne & Jacobs Mfg. Co., Columbus. Syracuse Chilled Plow Co., Syracuse,

Wind Mills lint & Walling Co., Kendallville, Ind.

Window Cord son Cordage Works, Boston, Mass Window Fasteners

Stanley Works, New Britain, Conn Window Stop Adjusters
Ives, H. B. & Co., New Haven, Conn.

Window Weights

Barnev & Reed M'g. Co., Boston, Mass.

Wire
Cleveland Wire SpringCo., Cleveland, O
Dillon-Griswold Wire Co., Sterling, ill.
Grand Crossing Tack Co., Grand Crossing, ill.
Kidd Bros. & Burgher Steel Wire Co.,
McKee's Rocks, Pa.
Miller & Van Winkle, Brooklyn, N. Y.
National Wire Co., New Haven, Ct.
New Haven Wire Hig. Co., New Haven,
Frentiss, Geo. W. & Co., Holyoke, Mass.
Reading Screw Co., Norristown, Pa.
Spencer Wire Co., Worcestgr., Mass.
Stewart Wire Co., Easton, Pa.
Summit Wire Co., Easton, Pa.
Summit Wire Co., Cuyahoga Falls, O.
Townsend, C. C. & E. P., New Brighton.
Trenton Iron Co., Trenton, N. J.
Wolff, R. H. & Co., Lid., 118th St. and
Harlem River, N. Y.
Wright & Colton Wire Cloth Co., Worcester, Mass.

Wire Chains Bridgeport Chain Co., Bridgeport, Ct. Hungerford, U. T., Brass & Copper Co., 121 Worth St., N. Y. Onelda Community, Ltd., Niagara Falls, N. Y.

Wire Cloth

Wire Cloth

Barnum, E. T., Detroit, Mich.
Clinton Wire Cloth Co., Clinton, Mass
Derby, Edward & Sons, Philadelphia.
Estey Wire Works Co., 66 Fulton St.,
New York.
Gilbert & Bennett Mfg. Co., 44 Cliff St.,
New York.
Howard & Morse, 45 Fulton, St., N. Y.
Hungerford, U. T. Brass & Copper Co.,
121 Worth St., New York.
Ludlow Saylor Wire Co., St. Louis, Mo.
Michigan Wire Cloth Co., Detroit, Mich.
New Freedom Wire Cloth Co., New
Freedom, Ps.
N. J. Wire Cloth Co., Trenton, N. J.
Scheeler's Sons, Buffalo, N. Y.
Tyler, W. S. Co., Cleveland, O.
Wirkwire Bros., Cortland, N. Y.
Wirkwire Bros., Cortland, N. Y.
Wirsht & Colton Wire Cloth Co.,
Worcester, Mass.
Wire Clotters

Wire Cutters

Chandler & Farquhar, Boston, Mass. King, J. M. & Co., Watertown, N. Y. Utica Drop Forge & Tool Co., Utica, N. Y.

Wire Dies McFarland, Wm., Trenton, N. J.

Wire Drawing Machinery Morgan Construction Co., Worcester. Mossberg & Granville Mfg. Co., Provi-dence, R. I.

Wire Fences-(See Fencing, Iron and

Wire Goods

Vire Goods
Brooks, M. S. & Sons, Chester, Conn.
Darby, Edward & Sons, Philadelphia.
Gilbert & Bennett Mfg. Co., 44 Cliff St.,
New York.
Jenckes, E. Mfg. Co., Pawtucket, R. I.
Michigan Wire Coth Co., Detroit, Mich.
Scheeler's Sons, Buffalo, N. Y.
Wire Goods Co., Worcester, Mass.

Wire Forming Machinery Automatic Machine Co., Bridgeport, Ct. Manville, E. J. Mch. Co., Waterbury, Ct. Nilson, A. H. Mch. Co., Bridgeport, Ct. Snuster, F. B. Co., New Haven, Com.

Wire Mill Machinery
Braddock Mch. & Mfg. Co., Braddock,
Pa.

Pa urner, Vaughn & Taylor Co., Cuya-hoga Falls, O. Wire Mats
Hartman Mfg. Co., 309 Broadway, N. Y.

Wire Nails American Screw Co., Providence, R. L. Dillon-Griswold Wire Co., Sterling, Ill. Grand Crossing Tack Co., Grand Crossing, Ills.
National Wire Co., New Haven, E. Summit Wire Co., Cuyahoga Falls, O. Townsend, C. C. & E. P., New Brighton.

Wire Nail Machinery
Braddock Mach. & Mfg. Co., Braddock,

Braddock, Mach. & Mfg. Co., Braddock, Ps.;
Miller, H. J., Bridgewater, Mass.
National MacMinery Co., Tiffin, Ohio.
Turner, Vauglin & Taylor Co., Cuyaho-ga Falls, O. Wire Parts

enkinson, R. C. & Co., Newark, N. J. Wire Reels Adjustable Shuster, F. B. Co., New Haven, Conn

Wire Rods. Steel Consolidated Iron & Steel Co., Bristol Consolidated Iron & Steel Co., Bristol Pa.

National Wire Co., New Haven, Conn. Nicoll, . & Co., 39 st Wall St., N. Y. Prentiss, Geo. W. & Co., Holyoke, Mass. Spencer Wire . o., Worcester, Mass. Wolff, R. H. & Co., Ltd., 118th Street and Harlem River, N. Y.

Wire Rope, Iron and Steel American Steel & Wire Co., Chicago, Ill. Broderick & Bascom Rope Co., St. Louis. California Wire Works San Francisco. Hazard Mg. Co., Wilkesbarre, P. A. Leschen & Sons Rope Co., St. Louis. Macomber & Whyte Rope Co., Chicago.

BI.
Trenton Iron Co., Trenton, N. J.
Waterbury Rope Co., 69 South St., N. V.
Williamsport Wire Rope Co., Williamsnort, Pa. Wire Straightening and Cutting

Shuster, F. B. Co., New Haven, Conn. Wood Hardware
Bliss, R. Mfg. Co., Pawtucket, R. I.

Machinery

Wood Screw Machinery
Cook, Asa S. & Co., Hartford, Conn.
Fox Machine Co ,Grand Rapids, Mich.
Wood Working Machinery

Defiance Mch. Works, Defiance, O. Fav J. A. & Egan Co., Cincinnati O. Seneca Falls Mfg. Co., Seneca Falls, N.Y. Woods, S. A. Machine Co., So. Boston, Mass.

Woodenware Richmond Cedar Works, Richmond, Va Wrenches Atlas Pipe Wrench Co , 121 Liberty St., Belden Machine Co., New Haven, Conn. Chicago House Wrecking Co., Chicago. Ill.

Chicago House wrecking Co., Chicago.

III. Worth St., N. T., Brass & Copper Co., 12! Worth St., N. Y.

12! Worth St., N. Y.

Reystone Drop Forge Co., Phila., Pa.

R. ystone Mgc. Co., Buffalo, N. Y.

Peck, Slow & Wilcox Co., 2 Murray

Star Mfg. Co., Carpentersville, III.

Trimont Mg. Co., Roxbury, Mass.,

Williams, J. H. & Co., Brooklyn, N. Y.

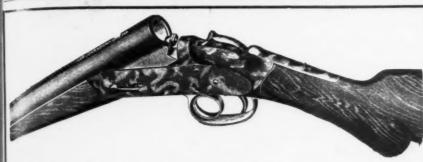
Wrenches, Adjustable S Pipe Keystone Mfg. Co., Buffalo, N. Y.

Wrigners
Chattanooga Washing Machine and
Wringer Co., Chattanooga, Tenn.

Zinc Nails Phillips, E. & Sons, So. Hanover, Mass. Zinc Plates
Phillips, E. & Sons So. Hanover, Mass.







The Newest and Best.

The Iver Johnson Ejector

Semi-Hammerless Single Gun.

ALMOST A DOUBLE GUN.

This gun can be opened, closed and fired without changing the position of the hands. The quickest gun to load and fire made. It is light, compact and nicely balanced. Medium choked barrel, walnut stock with rubber butt plates, case-hardened finish and safety mechanism.

SEND FOR DESCRIPTIVE CATALOGUE.

BRANCHES:

New York, 99 Chambers St. Boston, 166 Washington St. Worcester, 364 Main St. Iver Johnson's Arms & Cycle Works, FITCHBURG, MASS.

Republic Iron & Steel Co.,

BAR IRON. BAR STEEL

PIG IRON.

MACHINE BOLTS.
CARRIAGE BOLTS.
GIMLET POINT COACH SCREWS.

TURNBUCKLES. R. R. SPIKES.

Sales Offices:

New York, Cleveland.

Cleveland, St. Louis, Buffalo, Cincinnatí, St. Paul, Birmingham, San Francisco, Butte, Mont. ROBT. WETHERILL & CO.,

CHESTER, PA.

Manufacturers

Corliss Engines,

BERRY SAFETY

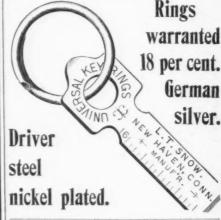
BOILERS.

CLARK & PARSONS CO., East Wilton, Maine, U. S. A.

Corn KNIVES

NEW LINE

Send for Circulars.
WIEBUSCH & HILGER, Ltd., N. Y.,
Sole Agents for U. S. and Canada.



WIRE PICTURE CORD,
BRIGHT WIRE GOODS,
SPOOL WIRE,
BIRD CAGE SPRINGS AND
CHAIN.

Ossawan Mills Co., - Norwich, Ct.





Ask Hardware Dealers, or send for prices, etc.
HILL DRYER COMPANY, Worcester, Mass.



Reeves write for Physical Tests. Paul S. Reeves Toon Philadelphia, Pa. U.S.A.

000000000000000



Upright, Simple and Compound, for **Light and Power** Purposes. Efficient, Durable. Compact, Powerful. 5

BUFFALO FORGE CO., Buffalo, N. Y. 3



Metal Polish.

The Tanite Co.. Stroudsburg, Pa.





Cast Iren Pipe for Water or Gas. Chas. MILLAR & Son Co., Utics, N. Y., Selling Agents. Also Flanged Pipe, Lead Pipe and Piumbing Materials.

SPENCER AUTOMATIC MACHINE SCREW CO.



HARTFORD, CONN.



Office and Whs., N.W. Cor. 19th 8t. & Pennsylvania Ave. Dayton Swaging Machines Manufacturers STEEL CASTINGS.

A Substitute for Steel and Wrought Forgings. Circulars Sent on Application.

Barber Brace

See Page 96

MILLERS FALLS CO., 28 Warren St., New York.

Springs and Axles ROLLING MILL.

F. W. Wurster & Co., 375 Kent Ave., - Brooklyn, N. Y.

LIGHTNING BURRING REAMER, for pipe. Will do 1 in. down to % in. pipe.



Wiley & Russell Mfg. Co., Greenfield, Mass., U. S. A

LIDGERWOOD

The STANDARD For QUALITY and DUTY LIDGERWOOD MFG. CO., 96 Liberty St., N. Y.

ESTABLISHED Spring Making, 1842. Steel Making, 1845 Norway Iron, 1871 (Re-Rolled).

WM. & HARVEY ROWLAND.

Springs, Steel, Re-Rolled Norway Iron & Slit Norway Nail Rods.



"KENNEDY"



GLOBE, ANGLE and RADIATOR SWING CHECK VALVES.

THE KENNEDY VALVE MFG. CO., 58 Beekman St., New York.





and and all kin of Reducing Also Manu

facturers of MACHINE NEEDLE f all kind

Vol.

Readi

Alpha

Class

Adver

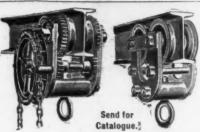
IR

SI

SA

EXCELSION NEEDLE CO., Torrington, Conn.





PLAIN AND GEARED

FORGED YOKE TROLLEYS.

MALLEABLE IRON CASTINGS TO ORDER. THE CHISHOLM & MOORE MFG. CO., Cleveland, -Ohio.

Twenty Years of Success! GEM **SPRING** HINGES.

Write for our catalogue.

Van Wagoner & Williams Hardware Co.,

Cleveland, O., and New York. U. S. A.